Sciences Po Strasbourg
École de l'Université de Strasbourg

UNIVERSITY OF STRASBOURG
INSTITUTE OF POLITICAL STUDIES

THE GEOPOLITICS OF ENERGY IN LEBANON AND THE EASTERN MEDITERRANEAN: DISCORD OR STABILITY?

Written by **Lorène KARAM**

In partial fulfilments of the requirements for the degree of
Masters in International Relations – Globalization and Transnational Challenges

Under the supervision of:

Pr. Dr. Sylvain SCHIRMANN,
professor at the Strasbourg Institute of Political Studies, researcher at the Dynam'E laboratory, and chair of the Jean Monnet Excellence Centre

Dr. Maria GAINAR,
visiting professor at the Strasbourg Institute of Political Studies and Strategy & Organizational Culture director at ENGIE

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ABSTRACT

While Lebanon and the Eastern Mediterranean are different by their scale, they are similar in the way that they are very socially and politically complex. The recent offshore hydrocarbon discoveries in the eastern coast of the Mediterranean Sea have drastically changed the geopolitics of the region. Domestically and regionally, energy resources can be used either as tools of stability or as tools of discord. While energy resources can bring their lot of challenges, such as maritime border disputes and resource curses, they can also represent an opportunity towards development and peace.

Keywords: Lebanon, Eastern Mediterranean, energy geopolitics, offshore, stability, maritime disputes, peace.

Le Liban et la Méditerranée orientale, bien que différents de par leur échelle, sont similaires dans l'optique où ils sont tous deux complexes, aussi bien socialement que politiquement. Les découvertes récentes de gisements d'hydrocarbures offshore sur la côte orientale de la Mer Méditerranée ont changé la donne géopolitique de la région. Les ressources énergétiques peuvent être facteur de stabilité ou bien d'instabilité, dans les contextes nationaux et régionaux. Les conflits territoriaux maritimes et la malédiction des ressources sont deux enjeux clés intrinsèquement liés au développement des ressources énergétiques. Cependant, ces dernières peuvent aussi être utilisées comme un outil de développement et de paix.

Mots-clés : Liban, Méditerranée orientale, géopolitique de l'énergie, offshore, stabilité, conflits territoriaux maritimes, paix.

يختلف لبنان و دول الشرق الأوسط على مستوى الجغرافيا السياسية، لكنهم يتشابهون سياسيًّا و اجتماعيًّا في تعقيداتهم. أحدثت الاكتشافات الهيدروكربونية البحرية الأخيرة في الساحل الشرقي للبحر الأبيض المتوسط تغييرًا جذريًا في الجغرافيا السياسية للمنطقة. يمكن أن تُستخدم مصادر الطاقة محليًّا و إقليميًّا لتكون عامل للاستقرار او عامل للخلاف. أيضًا، يمكن لهذه المصادر ان تجلب الكثير من التحديات، منها، النزاعات الحدودية البحرية بين الدول. من ناحية أخرى، يمكنها أن تمثّل فرصة لتحقيق التطوّر و السلام.

الكلمات المفتاح : لبنان، الشرق الأوسط، الاكتشافات الهيدروكربونية البحرية، الجغرافيا السياسية، الاستقرار، النزاعات الحدودية البحرية، السلام.

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Bcm	Billion cubic meters
CEDRO	Community Energy Efficiency and Renewable Energy Demonstration Project for the Recovery of Lebanon
CoM	Council of Ministers
EdL	Electricité du Liban
EEZ	Exclusive Economic Zone
EITI	Extractive Industries Transparency Initiative
EMGF	Eastern Mediterranean Gas Forum
EPA	Exploration and Production agreement
FSRU	Floating storage regasification unit
GWh	Gigawatt per hour
IPP	Independent power producer
LCEC	Lebanese Center for Energy Conservation
LNG	Liquefied natural gas
LOGI	Lebanese Oil and Gas Initiative
LPA	Lebanese Petroleum Association
LTA	Lebanese Transparency Association
MoEW	Ministry of Energy and Water
MSG	Multi-stake group
MW	Megawatt
NEEAP	National Energy Efficiency Action Plan
NEERAP	National Energy Efficiency and Renewable Action program
NGO	Non-governmental organization
OPRL	Offshore Petroleum Resources Law
PAR	Petroleum Activities Regulation decree
TRNC	Turkish Republic of Northern Cyprus
UfM	Union for the Mediterranean
UNCAC	United Nations Convention against Corruption
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Program

INTRODUCTION

The Eastern Mediterranean Sea has been the scene of numerous hydrocarbon discoveries throughout the last decade. While most Eastern Mediterranean countries have begun their offshore exploration activities in the early 2010s, Lebanon demarcated itself by signing its first hydrocarbon activities agreement in 2018. Although it is characterized as a late bloomer in the regional gas market, Lebanon could potentially hold important hydrocarbon resources. Such potential resources, if managed correctly, could be used to the benefit of Lebanon and the Lebanese people. It is therefore interesting to assess the nascent Lebanese hydrocarbon sector in the context of the more developed Eastern Mediterranean hydrocarbon sector.

The development of the Lebanese hydrocarbon sector, and of the Eastern Mediterranean hydrocarbon sector as a whole, comes with its lot of challenges and opportunities. The author has shown a deep interest in the way stability can be impacted by energy matters early in their academic journey. The geopolitics of energy has thus always been fascinating; the application of the latter to politically complex regions and states, such as the Eastern Mediterranean and Lebanon, makes it all the more interesting.

Countries in the Eastern Mediterranean, namely Cyprus, Israel and Egypt, have shown a rapid evolution in their hydrocarbon sector following the discovery of offshore resources. Lebanon is developing its hydrocarbon sector preemptively, before the discovery of commercial hydrocarbon resources, in order to have the legal and financial framework settled once production is ready to flow. However, domestically, such a haste can be unfavorable to Lebanon as it can subject it to an early onset of the resource curse, called the “presource” curse. The resource curse is a phenomenon that leads to an increase in conflicts, a decrease in democracy, and to economic instability in hydrocarbon producing countries. The “presource” curse is very similar to the resource curse, aside the fact that it happens before a country ever starts producing hydrocarbons – as is the case in Lebanon.

Another interesting concept is that of energy security. For energy consuming countries, energy security is the securitization of energy sources to import and consume, while for energy producing countries, it is the securitization of export markets to sell their product. Both are very important, as consuming countries vitally rely on energy for their functioning, while producing countries rely

on the monetization of their hydrocarbons for development. Lebanon and the Eastern Mediterranean are therefore concerned by energy security.

Energy insecurity often leads to the development of energy nationalism. Energy nationalism is defined as the need for control over energy resources over a certain territory; it is a driver of maritime borders dispute in the Eastern Mediterranean, as is the case between Lebanon and Israel, and between Cyprus and Turkey. In fact, when energy resources are located in offshore areas, which are more difficult to legally manage, they often become coveted by neighboring states. Energy resources become geopolitical weapons, driving states' foreign policy. Energy nationalism thus develops easily in states nurturing conflictual relations with their neighbors.

Relying on energy diplomacy and economic peace in conflictual regions helps instill stability and further integration thus allowing the improvement of gas networks, and enhancing energy security of both importing and exporting states in the Eastern Med. Energy diplomacy is a type of foreign policy applied by states wishing to ensure their energy security and enhance their impact on the energy sector. Economic peace, on the other hand, is the engagement of politically discordant parties through economic ties. The use of energy diplomacy and economic peace in the Eastern Mediterranean could therefore lead to the stabilization and the development of the region.

In order to conduct this research, the author mainly relied on the analysis of the scholarly literature closely related to the Lebanese hydrocarbon sector, to the Eastern Mediterranean geopolitics, and to energy questions as a whole. Primary and secondary sources such as books, journal articles and reports were used, written by various authors and organizations such as: Amsellem, Baconi, Huet, Darbouche, Fattouh, Al-Katiri, and the Lebanese Oil and Gas Initiative, to cite a few. Such a thorough review of primary and secondary sources allowed the author to grasp the concepts and theories that were vital to the drafting of this study. Case studies were also examined; the most important being the birth of the hydrocarbon sector in Lebanon. An online survey was established in order to highlight the Lebanese public opinion regarding the hydrocarbon sector; public opinion that is rarely taken into account in Lebanese decision-making. The hydrocarbon sectors of other states in the Eastern Mediterranean, such as Cyprus, Israel and Egypt were also reviewed. The dynamics between conflictual states in the region were also thoroughly analyzed by the author. Such assessments have helped addressing the practical part of this study. The theoretical and the

practical elements of this research have therefore allowed the author to conduct a critical analysis of the energy geopolitics in Lebanon and the Eastern Mediterranean.

In this research, the author aimed to unravel the link between hydrocarbons and stability, by analyzing the ways in which hydrocarbons provoke upheavals, and the ways in which they instill peace and development, in politically complex areas such as Lebanon and the Eastern Mediterranean.

This work is structured into three main parts. Firstly, the author depicted the energy landscapes of Lebanon and the Eastern Mediterranean, while assessing the energy policies of states. Secondly, the challenges linked to hydrocarbon development, such as domestic corruption and regional political unrest, were analyzed. Finally, the peace and development opportunities linked to energy were put forward, as a way towards progress in Lebanon, and towards integration in the Eastern Mediterranean region as a whole.

SURVEY

Academia provides guidance for policy-makers; it also represents a source of reliable information for citizens. Informed citizens can take part in healthy, non-partisan public debates, alongside researchers and policy-makers (El-Amine 2019). Public debate is a crucial part of democratic systems; it is a forum where public opinions and expectations relevant to public policies and institutions are formulated (Sunay 2012). Lebanon scored -0,5 on the 2018 Voice and Accountability indicator[1] of the World Bank; such an indicator captures the extent to which a country's citizens are able to participate in public life (World Bank 2020).

Public debate can encourage the participation of citizens in the public sphere and help with the creation of a more transparent and accountable governance. It is therefore important to take the public expectations towards the Lebanese hydrocarbon sector into account in the energy public debate. Given the inexistence of such a survey, it was convened that one should be realized.

A survey was therefore created with the objective of collecting the public expectations of the Lebanese citizens and residents of Lebanon on the energy sector. The survey contained 13 different questions and reached a total of 206 persons; it was taken voluntarily and anonymously. The survey was constructed in a way that only gave people holding the Lebanese citizenship and people residing in Lebanon access to the entirety of the questions; the first two questions were therefore conditional. The first question asked whether the surveyed person lived in Lebanon or not; a positive answer would take the surveyed person to the second question, asking whether the person held the Lebanese citizenship or not. Both affirmative and negative answers will allow the person to access the rest of the questions of the survey. When the first question is answered with a negative answer, the interviewed person is also asked whether they hold the Lebanese citizenship or not in the second question. However, only an affirmative answer will grant the surveyed person the access to the rest of the survey. A negative answer will lead to the automatic submission of the

[1] The Voice and Accountability indicator estimates range from -2,5 to 2,5. France, for example, had a score of 1,2 in 2018.

survey; such construction helped limit the interviewed population to Lebanese residents and citizens, while still allowing the Lebanese diaspora and expatriates to give their answers.

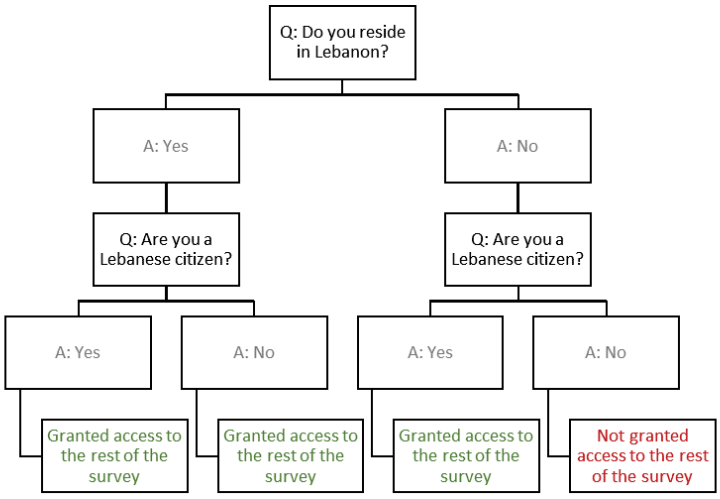


Figure 1 Survey answer chart

However, such construction did not allow people who have lived a long time in Lebanon and who have left the country afterwards to answer the rest of the questions. It also excluded people having a Lebanese mother[2], and living abroad, from answering. Consequently, on the total of 206 answers, 205 persons had access to the entire survey. The population of this survey is therefore composed of 205 persons. 78% of surveyed persons are Lebanese citizens living in Lebanon, while 18,6% are Lebanese expatriates living abroad and 3,4% are foreigners living in Lebanon.

The rest of the survey encompasses numerous questions about the Lebanese energy sector. The third question asks whether the interviewed person knew that potential hydrocarbon resources were discovered in the Lebanese offshore area. Although a big majority of the surveyed population - 88,8% - answered by the affirmative, the 11,2% remaining were not aware of the Lebanese geological potentiality prior to this survey. Out of the people who did not know about the potential hydrocarbon discoveries offshore Lebanon, 82,6% are Lebanese citizens living in Lebanon. Such

[2] It is important to note that the Lebanese citizenship is only passed by the father, and not the mother. A Lebanese woman can therefore neither give her citizenship to her foreign spouse, nor to her children.

numbers further denote the gap between the Lebanese citizens and the access to reliable information, especially in the field of energy.

The fourth question of the survey asked the interviewed person to estimate the monetary value of the potential hydrocarbon reserves in Lebanon. The original intent of this question was to analyze whether the surveyed population would overestimate or underestimate the potential Lebanese hydrocarbon reserves. However, and after careful consideration, it was deemed wiser to disregard this question and not to take it into account in the context of this study. As was explained previously, giving figures of potential resources can be misleading for citizens, since such numbers could be considered as proved and authentic by non-experts. Estimating the monetary value of potential hydrocarbon reserves is therefore speculatory and should be avoided; the fourth question of this survey was consequently dismissed.

In the fifth question, the interviewed population was asked how they would rather Lebanon uses its hydrocarbon resources. Numerous choices were given: the first one proposed to export the hydrocarbon resources in favor of financial liquidity, while the second one suggested using the hydrocarbon resources domestically in order to meet power demands. A third choice was given, encompassing both options; it was picked by 83,6% of the surveyed population. Only 3,4% of the population would rather hydrocarbons be solely sold and exported.

The surveyed population was asked about their initial reaction to the potential hydrocarbon discoveries offshore Lebanon in the sixth question. The interviewees had the choice between four answers: happy, neutral, fearful and perplexed. Collected answers were homogeneous and prove that reactions were very diverse. 37,1% of the population, the majority in this case, claimed to be happy about the potential discoveries. The remaining answers, neutral, fearful and perplexed were chosen by 24,9%, 19% and 19% of the interviewed population respectively.

The seventh question asked the surveyed population if the potential Lebanese hydrocarbon revenue would be beneficial to all the Lebanese people, or if it could only give one confessional group an advantage over others. The answers to this question highlights the duality of the Lebanese population: 55,1% of the interviewees said hydrocarbon revenue would benefit everyone, whereas the remaining 44,9% claimed it would only profit to a certain confessional group. As was explained

earlier, the Lebanese political system is based on sectarian fragmentation, as it thrives to divide power equally between the major confessional groups. Such a sectarian system permeates governmental institutions and administrations, thus eroding public trust in the state (Fattouh and El-Katiri 2015). Important political decisions can therefore only be taken when a consensus is reached between all religious communities, which often creates delays and political deadlocks (Humud 2018). Such was the case for the creation of the Lebanese Petroleum Association. The association was created in 2012 after a consensus regarding the nomination of its six members was reached; the process had been delayed because sectarian groups were fighting over the control of the association through the nomination of its members (Marcel 2013). The fears of the part of the surveyed population claiming potential hydrocarbon revenues could only profit a confessional group in particular are therefore rooted in the socio-political history of Lebanon.

In the eighth question, the interviewed population was asked whether they thought the Lebanese government was capable of managing energy resources or not. 77,6% of the interviewees believe the government is inept of doing so. Lebanon indeed has low capacity in the hydrocarbon sector; it also scored -0,6 on the 2018 Government Effectiveness indicator[3], which captures perceptions of the quality of public services, the degree of independence of a government from political pressures, the quality of policy-making and the credibility of policy implementation (World Bank 2020). Correspondingly to all emerging hydrocarbon producing states, Lebanon must build capacity[4] in order to manage the development of its energy resources (Marcel 2013).

The ninth question asked the surveyed population if it believed the management of energy resources would be impacted by corruption. The answers are clear: 86,8% of the interviewees answered affirmatively. Such affirmations are not unsubstantiated: Lebanon scored 28/100 on Transparency International's Corruption Perceptions index of 2019, therefore being one of the world's most corrupt countries (Transparency International 2020).While there are no exact numbers measuring the impact of corruption on the Lebanese economy, estimated figures went as high as 10% of the country's GDP in 2015 (Alsharabati and Chaer 2015). Public fears surrounding

[3] Similarly to the Voice and Accountability indicator, the Government Effectiveness indicator estimates range from -2,5 to 2,5. France, for example, had a score of 1,5 in 2018.
[4] Capacity building is the process by which individuals and organizations obtain or improve the skills and knowledge required to do their jobs efficiently.

the impact of corruption on the nascent Lebanese hydrocarbon sector are therefore legitimate as a big part of the Lebanese population perceives the potential hydrocarbon resources as a prospect for national development.

The interviewed population was asked how the Lebanese government and its energy sector could regain the trust of the public in the tenth question. Four different options were given: resorting to international auditing by a third party, publishing all audit logs and information, including civil society members in the energy sector, and joining international organizations for transparency. The interviewees could choose all the answers that were relevant in their opinion, and could also write their personal opinion in a fifth option. The most often chosen option, with a count of 138, was the publication of all audit logs and information relevant to the energy sector. Giving the public access to crucial documents and information would generate more transparency, which would in turn prompt greater accountability. Three different laws were promulgated in 2017 and 2018 in an effort to enhance governmental transparency in Lebanon. Law 28 on "The right to access to information" was passed in 2017 after being introduced in Parliament in 2009. Such law affirms the right of any person to receive information on demand, and requires for the publication of all expenditures and annual activity reports (Kassabian 2018). Law 83 on "Whistleblowers protection" aims to protect any person who denounces acts of corruption, thus preserving such persons from personal, professional and judiciary harm (Sadek 2019). Law 84 on "Strengthening transparency in the oil and gas sector" renders the publication and disclosure of all documents and information relating to the energy sector compulsory during various stages of petroleum activities (Alem and Tebbo 2019). Law 84 also calls for the involvement of civil society actors in the monitoring of the transparency of the Lebanese energy sector; such disposition was deemed as an effective way to win back the trust of the public by the surveyed population 97 times. The formerly cited laws, if fully implemented, would greatly enhance the transparency and the accountability of the Lebanese government. However, such legislation has not yet been implemented by public institutions; the lack of enforcement of the rule of law was previously demonstrated by Lebanon's low score on the Government Effectiveness indicator. Such lack of effort prompted various actors of the Lebanese civil society to urge for the implementation of the promulgated laws (Kaissy 2020; Lebanese Oil and Gas Initiative 2019a; Lebanese Transparency Association 2019). In 2017, Lebanon expressed its intention of joining the Extractive Industries Transparency Initiative (EITI)

with the object of increasing governmental transparency in the energy sector. Such a measure would be greatly beneficial as it prompts the government and the civil society to work hand in hand to promote transparency. Joining an international organization to enhance transparency was chosen 126 times by the surveyed population as an effective way of regaining the trust of the public. However, three years after its initial wish to join, neither is Lebanon a member of EITI, nor is its validation underway (Extractive Industries Transparency Initiative 2020). Moreover, experts fear that becoming a member of EITI might only enhance Lebanon's image, and not the transparency and accountability of its energy sector (Lebanese Oil and Gas Initiative 2019b; Nakhle 2020). Another way of strengthening Lebanon's accountability would be to subject its energy sector to external auditing by third parties. Auditing is the determination of operational and financial processes as being in compliance with regulatory and legislative requirements. External audits are done by independent third parties in order to ascertain the transparency of finances and operations. Hiring non-Lebanese auditing companies to assess the transparency of the energy sector in Lebanon was deemed as an efficacious way of reestablishing trust between the government and the public 122 times in this survey. Some of the interviewees were more pessimistic as they answered that the Lebanese government would never be able to gain back the trust of the public.

The eleventh question asked the surveyed population whether they thought energy resources in offshore blocks 8 and 9 would spark armed conflict with Israel or not. Since such resources have already caused conflict between the two countries, it was important to ask the public if they believed the dispute could escalate and evolve to a military one. The answers to this question showed no general tendency as 50,2% of the population answered by the affirmative, and the remaining 49,8% answered by the negative. The twelfth question is closely linked to the eleventh as it questions the interviewees whether they thought the Lebanese government was capable of settling the energy resources dispute with Israel efficiently. The general tendency was rather pessimistic as 66,3% of the surveyed population answered by the negative. Lebanon and Israel have never had diplomatic relations and cannot carry out negotiations. The prospect of an amicable solution to the energy resources dispute is therefore unthinkable. However, it is crucial that an efficient settlement be found to prevent the conflict from escalating in case hydrocarbon activities are carried out in blocks 8 and 9. Such issues will be further detailed in the following chapters.

The thirteenth and last question of this survey questioned the interviewees about their preferences regarding the utilization of the potential energy revenues. The public opinion was divided: 37,6% of the population wants the energy revenue to be used to construct new infrastructure, 37,1% wants it to be used to repay the Lebanese national debt, and 20,5% wants the revenue to enter a sovereign wealth fund. The remaining 4,8% wants the revenue to be directly distributed to citizens as cash hand-outs. The Lebanese law on energy resources stipulates a sovereign wealth fund be created; however, such a decision seems premature as no hydrocarbons have been discovered in Lebanon yet. Experts warn about the unrealistic and overly optimistic expectations linked to the early creation of a sovereign wealth fund; such behaviour can result in increased public spending, which can be a foreshadowing sign of the resource curse (Arbid 2018).

Several conclusions can be drawn from the results of this survey. The surveyed population believes hydrocarbons can be a factor of development for Lebanon, and is afraid the country will not be able to profit from such revenue because of the Lebanese government's ineptness and corruption. It is therefore crucial to include external non-governmental actors to the monitoring process of the hydrocarbon sector in order to prevent the permeation of sectarianism and corruption. It is also important for Lebanon to build capacity in its energy sector in order to avoid mismanagement of hydrocarbon activities. The Lebanese government has sought help and consultancy from the Dutch and Norwegian embassies in Lebanon with the object of instilling a better governance of the energy sector. The Lebanese civil society has also sought international counseling from NGOs such as Pay What You Publish, the Norwegian People's Aid, and the Natural Resource Governance Institute in order to better monitor the country's energy sector. Improving the Lebanese energy sector will allow Lebanon to become an effective component of the Eastern Mediterranean energy hub.

CHAPTER I: ENERGY RESOURCES: A COVETED DISCOVERY

Section A- The Lebanese Holy Grail

The prospectivity of hydrocarbon reserves in the offshore area of Lebanon has been under evaluation since the early 1990s.

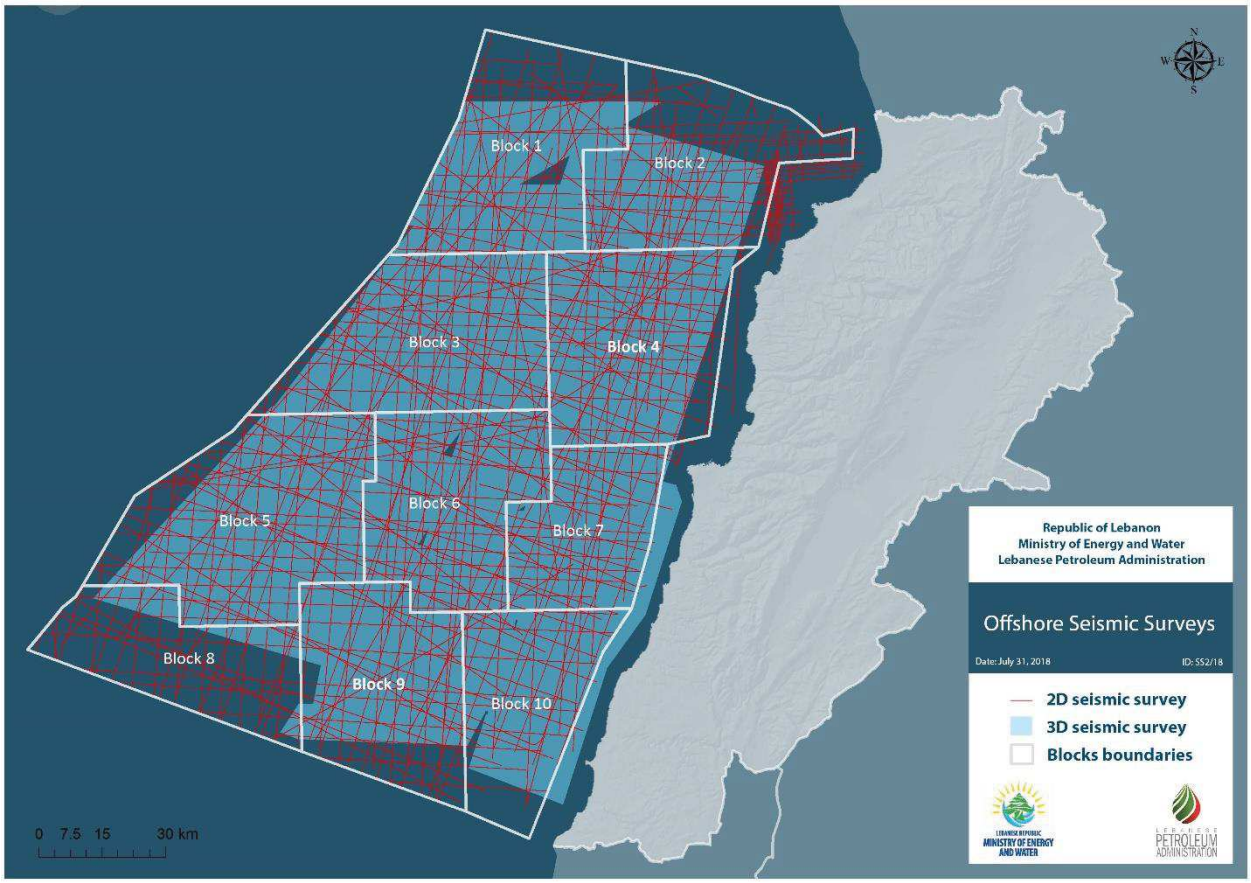


Figure 2 Map representing the offshore seismic surveys undertaken in Lebanon (source: Lebanese Petroleum Administration 2020)

The first 2D seismic study was conducted by Geco Prakla in 1993 and covered 508 linear kilometers of the offshore area adjacent to the city of Tripoli, in northern Lebanon. Numerous other 2D seismic surveys were carried out; in 2000 and 2002 by Spectrum, and in 2008 and 2011 by Petroleum GeoServices. Spectrum and Petroleum GeoServices respectively covered 5 172 and 8 638 linear kilometers of the Lebanese offshore area. 3D seismic surveys were conducted in addition to 2D seismic surveys. 2D seismic surveys are conducted along a straight line and result

in a cross section of the subsurface, whereas 3D seismic surveys are conducted in parallel and perpendicular lines and result in a cube, thus adding an additional dimension to the survey (Lundin Group 2019). From 2006 until 2013, Petroleum GeoServices continually organized 3D seismic surveys, thus covering an area of 9 700 km^2. Spectrum also carried out 3D seismic surveys and covered a surface of 5 360 km^2. Although not relevant to this study, it is important to note that surveys were also conducted to evaluate the hydrocarbon prospect of the Lebanese onshore area. A 2D onshore seismic survey, done by Spectrum, and a geophysical airborne survey were organized respectively in 2013 and 2015, covering approximately 4 000 km^2 of onshore area and 2 000 km^2 of coastal area.

The interpretation of the various seismic surveys identified numerous geological structures correlated with the presence of hydrocarbons in offshore areas, such as four way dip closures[5], direct hydrocarbon indicators[6] and stratigraphic traps[7] (Lebanese Petroleum Association 2020c). Such interpretations, coupled with reservoir characterization[8] and basin modeling[9] studies indicated the presence of hydrocarbons in the Lebanese offshore area. It is important to note that Lebanon has an ongoing maritime border dispute with Israel. Both countries have never agreed on a terrestrial border following the 1949 armistice, which led them to having two different border delineations. Maritime borders extend from terrestrial borders; the different boundaries have therefore led to an overlap in maritime border claims, creating a nearly 480 square kilometers ambiguous zone, in which each country claims to be sovereign. The maritime border conflict between Lebanon and Israel will be further detailed in the next chapter of this study.

Lebanon's estimated offshore hydrocarbon reserves vary from one study to another. The estimation of natural gas reserves ranges from 700 to 850 billion cubic meters (bcm), whereas the appraisal of oil reserves ranges from 600 to 800 million barrels (Abdul Rahim, Godart, and Eid

[5] Four way dip closures are geological structures with dome-like features. Many major oil fields in the world were discovered by using surface mapping to locate four way dip closures.
[6] Direct hydrocarbon indicators (DHI) are an anomalous type of seismic amplitude that may occur due to the presence of hydrocarbons.
[7] Stratigraphic traps, also called petroleum traps, are geological structures that allow the accumulation of hydrocarbons in a reservoir.
[8] Process of characterizing a reservoir based on its ability to store and produce hydrocarbons.
[9] Basin modeling is the reconstruction of the history of a basin to predict the volume and distribution of petroleum in a given area.

2017; Fattouh and El-Katiri 2015; Sia Partners 2019). However, such estimations are led down on an indicative basis and are not accurate, nor official. Although Lebanese petroleum activities are currently in the exploration phase, it is still early to confirm or refute the resource estimates (Lebanese Petroleum Association 2020a). According to Total, leader of the consortium in which it works alongside Eni and Novatek, drilling results are expected to be clearer around June 2020 (Azhari 2019d).

The discovery of potential hydrocarbon fields is a crucial development for Lebanon, as the country is a heavy energy importer. In 2017, oil represented nearly 96% of Lebanon's total energy mix; coal, biofuels and waste, wind and solar energy and hydro energy made up the remaining 4% (International Energy Agency 2018). Lebanon generates 98% of its electricity by using oil as a fuel source, whereas the remaining 2% is produced from hydro energy. The country is therefore almost completely dependent on energy imports for its electricity production as it needs to import all the oil it consumes (Verdeil 2019). Energy imports represented 22% of total Lebanese imports and amounted to nearly 4,5 billion dollars in 2017 (Sia Partners 2019). The potential hydrocarbon resources discovered in Lebanon's offshore area could help the Lebanese government to limit its energy imports and therefore enable it to save a substantial amount of money.

Governance in Lebanon

Lebanon is a Parliamentary Republic; the Lebanese government is organized around a confessional system that divides political power equally among Christians, Shias and Sunnis (Fattouh and El-Katiri 2015; Humud 2018). According to the Lebanese National Pact, a customary arrangement dating from the Lebanese Independence of 1943, the President of the Republic shall be a Maronite Christian, the Prime Minister a Sunni, and the Parliament Speaker a Shia. The National Pact also ensures the parity between Christians and Muslims; the Council of Ministers and the Parliament are therefore evenly divided between the two main confessional groups.

In order to comprehend the Lebanese government's management of energy resources in terms of governance, it is important to understand the mode of operation of Lebanon's political system. The Lebanese population elect the Members of Parliament (MP); these MPs are subsequently tasked with electing the President of the Republic, who then appoints a Prime Minister, tasked with

nominating the Ministers and forming a Council, that then needs to acquire the vote of confidence from the Parliament. The President of the Republic may ask the Council of Ministers to dissolve Parliament, and the Parliament may raise questions of no-confidence to the Council of Ministers during parliamentary sessions.

The Lebanese Constitution confers the legislative power to the Parliament and the executive power to the Council of Ministers[10] (Republic of Lebanon 1990). The Parliament thus votes and adopts new laws, while the President and the Prime Minister negotiate and ratify international treaties. The Council of Ministers draws up bills and decrees and is responsible for the implementation of legislation. There are two procedures for passing laws in Lebanon. Bills can be prepared by a Ministry, a Minister, or a General Director[11] of a Ministry; the law is then presented to the State Council, before being submitted to the Council of Ministers, and then introduced to Parliament. Laws can also be proposed by 1 to 10 MPs, thus reaching Parliament directly. Bills emanating from the Ministries typically take months to reach Parliament, whereas law proposals emanating from MPs take shorter time; however, bills are a *fait accompli* benefiting from the political consensus provided by the Council of Ministers, whereas law drafts emanating from MPs are merely proposals (International Law and Policy Institute 2013).

The Lebanese court system is divided into judicial and administrative jurisdictions. The judicial system has three levels of jurisdiction and is thus composed of courts of first instance, courts of appeal, and a Court of Cassation (IEDJA 2014). The administrative system is composed of the State Council; first level administrative courts are supposed to be established in each Lebanese muhafaza[12] following the reform of the Statute of the State Council in 2000, but this revision has yet to be implemented. The State Council has a consultative and a jurisdictional role on administrative decisions emanating from the state, its agencies or institutions. On one hand, it presents its opinion on administrative decisions to the executive power ; on the other, it handles disputes between the State, legal persons of public law, and individuals (International Commission of Jurists 2018). Decisions emanating from the state, its agencies or institutions can be appealed

[10] Such a balance of powers was constitutionalized by the Taif agreement of 1990.
[11] The General Directors are the highest level of public employees in the Lebanese administration, under the Ministers.
[12] Lebanon is divided into eight provinces, called “muhafazas”; each muhafaza is led by a governor and divided in districts, which are then divided into municipalities.

to the State Council by legal persons of public law and individuals. The Lebanese court system is weak and suffers from the interference of the legislative and executive branches into its affairs; the system is therefore subject to politicization and to the violation of the principle of separation of powers (Bertelsmann Stiftung 2020; International Law and Policy Institute 2013).

The Court of Audit is a financial oversight body, responsible for monitoring the financial operations of the Government. Such a court has two main responsibilities, which are pre-auditing and post-auditing. Pre-auditing allows the assessment of the validity of a transaction, and the compliance of such a transaction with legislation. For instance, all transactions exceeding 5 million LBP are pre-audited and transferred to the Court's Book of Accounts for approval. Post-auditing allows the identification of public personnel engaging in illegal financial operations and their prosecution. The Lebanese Court of Audit is severely understaffed and has mainly been focusing on its pre-auditing responsibility, thus undermining the importance of its prosecution role (International Law and Policy Institute 2013; Iskandar 2020).

The Civil Service Board is an oversight body placed under the Prime Minister's office and responsible for improving the public administration and its performance. The Board oversees all decisions related to employees, organization and salaries in the public administration. It is also responsible for the dismissal of public personnel whose performance is deemed unsatisfactory (International Law and Policy Institute 2013; Iskandar 2020).

The governance of energy resources

The balance of powers in the Lebanese hydrocarbon sector follows the general governance configuration. The institutional decision-making of the hydrocarbon sector is built around the Council of Ministers and relevant institutions, which are the Ministry of Energy and Water (MoEW) and the Lebanese Petroleum Association (LPA) (Lebanese Oil and Gas Initiative 2018).

The Council of Ministers is responsible for setting the general policy and managing the hydrocarbon sector (Marcel 2013). It holds the executive power and thus issues decrees for the good functioning of the sector, such as the Petroleum Activities Regulation decree (PAR) and the Prequalification decree. The Council of Ministers authorizes the Minister of Energy and Water to sign the Exploration and Production Agreements (EPAs), and approves the production and

development plan submitted by the companies participating in the licensing round. However, the Council of Ministers largely depends on the technical advice provided by the MoEW and the LPA surrounding hydrocarbon policy (International Law and Policy Institute 2013).

The MoEW is responsible for the implementation of the national oil and gas policy (Khodr and Uherova Hasbani 2013). It helps the Council of Ministers set the general hydrocarbon sector policy by raising propositions for the Council to discuss (Lebanese Oil and Gas Initiative 2018). The Ministry announces the licensing rounds and submits the results of bidding rounds to the Council of Ministers. It also recommends the signature of the EPAs to the Council, and approves the exploration plan submitted by the companies participating in the licensing round. The MoEW is responsible for the protection of water, health, property and the environment from pollution related to the hydrocarbon sector (Lebanese Oil and Gas Initiative 2017b).

The LPA is a governmental institution responsible for promoting the Lebanese petroleum potential. It is relatively new as it was established in December 2012 (Ghoble 2018). A committee consisting of the Minister of Energy and Water, the President of the Civil Service Board, and the Minister of Administrative Reform (OMSAR) set the selection criteria for the staff of the LPA. The committee then selected candidates and presented them to the Council of Ministers, who then had the responsibility of choosing the 6 members of the LPA board. Members of the LPA board cannot be removed by the MoEW; however, if a member quits before the end of their 6 years contract, the MoEW is responsible for finding another candidate (International Law and Policy Institute 2013). LPA members are prohibited from working at companies undertaking petroleum activities during their contract, and two years after the termination of the latter, in order to avoid conflicts of interest.

Although the LPA is financially autonomous, it falls under the tutelage of the MoEW; it is therefore not subject to the oversight of the Civil Service Board, unlike other governmental institutions (Fattouh and El-Katiri 2015; International Law and Policy Institute 2013). The LPA is subject to financial control by the Court of Audit; it is also subject to the control of an external auditing and accounting firm, chosen by the Ministry of Finance and the MoEW, to whom the auditing report shall be presented. Decisions taken by the LPA board members have to be based on consensus, and have to be approved by the MoEW and the Council of Ministers; such decisions

can also be subject to the review of the Supreme Council. The LPA is responsible for drafting the conditions of participation to the licensing rounds, as well as the invitations sent to firms, and the Model EPA. The LPA assists the MoEW in the negotiation of the EPA and is then responsible for submitting a report on the results of such negotiations to the Ministry (Lebanese Oil and Gas Initiative 2018). The LPA is also responsible for the evaluation and supervision of all petroleum activities undertaken in Lebanon, and for the management of the petroleum registry and data. Therefore, the LPA has an advisory and an executive role as a regulatory authority of the Lebanese petroleum sector.

As was explained earlier, the Lebanese Parliament is bestowed with the right of summoning Ministers for questioning, and has the power to withdraw confidence from a Minister and from the Council of Ministers. Such power theoretically confers a responsibility of oversight to the Parliament. The Lebanese Parliament is the legislative authority for oil and gas as it votes laws relative to the sector, such as the Offshore Petroleum Resources Law (OPRL) and the law on the strengthening of transparency in the petroleum sector. The Parliament receives a report on the progress of petroleum activities drafted by the MoEW every trimester, in order to keep the MPs informed about the advancement of the sector.

Civil society in Lebanon has acquired an oversight role in the petroleum sector despite it being non-governmental. It has pushed the Lebanese government to increase transparency and accountability measures regarding the management of natural resources. The Lebanese civil society has also encouraged the government to join the Extractive Industries Transparency Initiative (EITI); the initiative requires governments to disclose information on the management of the petroleum sector, thus enabling stakeholders, whether they are foreign investors, petroleum companies or Lebanese citizens, to understand the legal, regulatory and contractual framework of the sector (Lebanese Oil and Gas Initiative 2017b). Disclosure of such information would enhance the transparency of the petroleum sector, and would therefore lead to more accountability, as it would allow misconduct to be pinpointed, and then prosecuted.

The balance of powers in the petroleum sector therefore gives the Council of Ministers executive authority, while conferring the regulatory authority to the MoEW and the LPA. Parliament is the legislative oversight body while the Court of Audit is responsible for financial oversight of the

sector (Lebanese Oil and Gas Initiative 2018). On the other hand, civil society exercises an oversight function as it works to guarantee transparency and accountability in the petroleum sector.

Legal framework and regulations

As was mentioned earlier, laws are voted by the legislative power, the Parliament, whereas decrees are issued by the executive power, the Council of Ministers. The Lebanese petroleum sector is governed by an extensive legal framework, composed of laws and decrees which complete each other.

The Offshore Petroleum Resources Law[13] (OPRL) was voted in August 2010. It is a brief framework law that is supplemented by numerous decrees, which address specific issues and give more details to provisions (Fattouh and El-Katiri 2015; International Law and Policy Institute 2013). The OPRL gives the most important foundation guidelines of the petroleum sector. Article 3 and 4 provide that natural resources are owned by the State, in accordance with article 89 of the Lebanese constitution, and that revenues issued from petroleum activities are to be placed in a fund to profit next generations.

Article 7 of the OPRL acknowledges the importance of undertaking a Strategic Environmental Assessment (SEA); SEAs are required before the beginning of offshore licensing rounds. The Lebanese government conducted a SEA in 2012 and published its results in 2014; the assessment was deemed ineffective for risk mitigation by environmental experts (Lebanese Oil and Gas Initiative 2017a). The LPA is currently updating the SEA, for it to conform to international good practices.

Articles 8 and 9 articulated the roles of the Council of Ministers and the MoEW in the management of the Lebanese petroleum sector (Republic of Lebanon 2010). Article 10 of the OPRL provides the creation of a petroleum administration and led to the issue of the Petroleum Administration

[13] Law no. 132/2010: Offshore Petroleum Resources Law (OPRL)

decree[14] in 2012; such frameworks created the LPA and underlined its duties and powers as the Lebanese petroleum management institution.

Articles 14 provides that candidates to licensing rounds have the right to apply as groups. As is provided in article 15 of the OPRL, prequalification is mandatory for companies wishing to partake in the Lebanese offshore licensing rounds. The Prequalification decree[15], passed in 2013, regulates the prequalification of companies to participate in licensing rounds. At the time of its issue, such a decree was supposed to be generally applicable and not specific to each licensing round. However, as of 2019, the provisions of the 2013 Prequalification decree have been merged with the Tender Protocol and Model EPA of the second offshore licensing round (Lebanese Petroleum Association 2020b). The Prequalification decree established the purpose and criteria of prequalification, the conditions and submission of applications, and the rules on the LPA's treatment of applications (Lebanese Oil and Gas Initiative 2017b).

Chapter 6 of the OPRL delineates the Lebanese petroleum fiscal regime; the latter is detailed in the Exploration and Production Agreements (EPAs) issued by the government after the award of petroleum rights to companies participating in licensing rounds. Article 45 of the OPRL provides that taxes related to petroleum activities and rights conducted in Lebanon shall be subject to a specific law; the Tax Provision law[16], voted by the Parliament in 2017, elaborates on the application of such taxes. The Tender Protocol and Model EPA decree[17] was issued in 2017. The Tender Protocol implements rules of the OPRL and the PAR and gives details on the application process, the timetables and deadlines to respect, and on the general conduction of the petroleum agreement. The Model EPA is a guide for future EPAs; it regulates the legal and contractual relationship between the state and the company to which petroleum rights were awarded (Lebanese Oil and Gas Initiative 2018). The Lebanese fiscal regime relating to petroleum activities of the first offshore licensing round will be further detailed in the next section.

[14] Decree no. 7968/2012: Petroleum Administration
[15] Decree no. 9882/2013: Prequalification of Companies to Participate in Petroleum Activities Licensing Rounds
[16] Law no. 57/2017: Tax Provisions Related to Petroleum Activities in Accordance with Law 132/2010
[17] Decree no. 43/2017: Tender Protocol to Participate in Licensing Rounds and Model Exploration and Production Agreement

Article 76 of the OPRL provides that the law shall be supplemented by decrees proposed by the Minister of Energy and Water. The Petroleum Activities Regulations decree[18] (PAR), passed in 2013, establishes the legal, technical and commercial guidelines of the petroleum sector in Lebanon (Lebanese Oil and Gas Initiative 2018). The PAR therefore completes the OPRL by giving much more details on provisions. Article 4 of the PAR provides that the Lebanese EEZ is divided in blocks that will be subject to the awarding of petroleum rights; the coordinates and areas of such blocks are further detailed in the Block Delineation decree[19] of 2017. Articles 23 to 27 of the PAR provide rules on the award of petroleum rights in the Lebanese petroleum sector, thus detailing the process given in the fourth chapter of the OPRL (Lebanese Oil and Gas Initiative 2017b). Moreover, both the OPRL and the PAR contain provisions on the safeguard of local content interests; the companies to which petroleum rights are awarded have the obligation to employ Lebanese personnel and contractors, and to train said personnel to petroleum activities (Republic of Lebanon 2010, 2013a). Other chapters of the PAR detail the petroleum production and transportation, the cessation of activities, the production entitlement and fees that are further detailed in the EPAs, the exploration process, and the health, safety and environmental requisites.

In 2013, the Lebanese Parliament had voted the OPRL, and the government had issued the Petroleum Administration decree, the Prequalification decree, and the PAR decree: the legal framework was thus deemed as complete enough to begin the prequalification of companies for the first offshore licensing round of Lebanon. However, during the same year, former Prime Minister Najib Mikati and his government resigned before issuing the decrees necessary to the pursuance of the licensing round; such decrees regarded the Block delineation as well as the Tender Protocol and Model EPA (Abdul Rahim, Godart, and Eid 2017). Lebanon's first offshore licensing round thus entered a deadlock until said decrees were issued in 2017, following four years of delay.

As was said earlier, the OPRL mentions the creation of a sovereign wealth fund (SWF) for the collection of revenue arising from petroleum activities in article 4. Article 6 also mentions the creation of a national oil company (NOC) after substantial commercial discoveries have been made. Such provisions led to the drafting of two laws relating to the establishment of a SWF and

[18] Decree no. 10289/2013: Petroleum Activities Regulations (PAR)
[19] Decree no. 42/2017: Block Delineation decree

a NOC; such law drafts are deemed as controversial by experts given their prematurity (International Law and Policy Institute 2013). In fact, Lebanon has not perceived any revenue from petroleum activities yet, except from the sales of geological surveys, and has not made any commercial discoveries either; the early establishment of a SWF and a NOC could therefore strain the already tight national budget if resources were allocated to their creation (Courson 2018; Lebanese Oil and Gas Initiative 2018).

The history of corruption in Lebanon, and the risk of such corruption permeating the petroleum sector, raised doubts about the government's ability to properly manage the nascent sector. The Lebanese government's intention to join the EITI led it to adopt the Transparency law[20], voted by Parliament in 2018 in order to impose transparency in the petroleum sector through the whole value chain. Moreover, the Council of Ministers is currently working on a decree that would allow the disclosure of contracts made between petroleum companies, their contractors and subcontractors. The Lebanese legal framework surrounding the petroleum sector is therefore rich and is deemed as in line with international best practices by experts.

Petroleum rights qualification and awarding

Lebanon has opted for the award of petroleum rights to be based on competitive bidding. Such a selection process is based on predefined criteria allowing for a preselection of candidates and on the bids presented by candidates; the process thus leaves little room for negotiations (Lebanese Oil and Gas Initiative 2018; Nakhle 2015).

In order to be able to qualify for petroleum rights awarding in Lebanon, petroleum companies first have to prequalify. Prequalification candidates have to fill legal, technical, financial and QHSE[21] criteria, which are detailed in the PAR and Prequalification decrees; such criteria create favoritism towards large petroleum companies. The latter are deemed by the government as possessing enough capital and expertise to exploit offshore resources; moreover, having large petroleum

[20] Law no. 84/2018: Enhancing Transparency in the Petroleum Sector
[21] QHSE is the acronym of Quality, Hygiene, Security and Environment.

companies operating offshore Lebanon could palliate the lack of expertise of Lebanese authority regarding the petroleum sector (International Law and Policy Institute 2013; Nakhle 2015).

The minimum number of rights holders is set to 3 per block; one of the rights holders has to be an operator, and thus bear responsibility of the management of day-to-day petroleum activities (Republic of Lebanon 2010). As was said earlier, the petroleum companies have the right to apply as a group, called a consortium; this allows firms to share risk and capital, and easier financial control by the state (Nakhle 2015). Petroleum rights can only be awarded to prequalified companies holding petroleum licenses, and having established a legal presence in Lebanon. During Lebanon's prequalification rounds in 2013 and 2017, 13 companies prequalified as operators while 38 prequalified as non-operators.

Following prequalification, prequalified candidates submit petroleum rights applications in which they specify their technical and commercial proposals; the application fee is $50,000 USD (Republic of Lebanon 2013a). The technical proposal includes the approach and timing of petroleum activities, as well as the number and depth of exploration wells. The commercial proposal includes biddable items such as the cost recovery ceiling and the profit sharing. The Lebanese fiscal regime will be further explained below.

The LPA evaluates different proposals by giving them scores, which are divided as follows: 30% for the technical proposal, and 70% for the commercial proposal. The applicants are then ranked by the LPA; the ranking is thus submitted to the Minister of Energy and Water. The Minister then undertakes negotiations with the provisional winner, which is the first ranking candidate, upon the recommendation of the LPA (Lebanese Oil and Gas Initiative 2018). The LPA and the Minister then draft a report on the results of negotiations and submit it to the Council of Ministers, who is in charge of authorizing the Minister to sign the EPAs.

During Lebanon's first offshore licensing rounds in October 2017, Total, Eni and Novatek regrouped as a consortium and submitted two bids: one on Lebanon's offshore block 4, and one on block 9 (Dupont 2019). Since there was only one offer for each block, the Council of Ministers authorized the attribution of the EPA to the only bidders upon recommendation of the Minister

and the LPA in December 2017. The Lebanese state and the consortium thus signed two EPAs for blocks 4 and 9 in February 2018 (Marcel and Obeid 2018; Sia Partners 2019).

The Lebanese fiscal regime

The main purpose of fiscal regimes is for the state to obtain a good share of petroleum revenues, while still encouraging petroleum companies to conduct exploration and exploitation activities (Nakhle 2015). The Lebanese fiscal framework is a profit sharing contract (PSC); it is not embedded in the OPRL but in the EPA. As was said earlier, EPAs are signed between the state and the firms; both parties have the obligation to hold the EPA confidential. However, the EPA is based on the Model EPA, which was made public; the Lebanese fiscal regime is therefore known.

Lebanon adopts a hybrid petroleum fiscal regime, made up from elements of both concessionary and contractual regimes. In concessionary regimes, the company owns the natural resources and bears all the costs relative to exploration and exploitation. The state receives taxes and royalties when resources are sold. In contractual regimes, the state owns the resources and the company is contracted to develop the sector. The company recovers the exploration and exploitation costs gradually, and the remaining revenue is shared between the company and the state. As is provided by article 4 of the OPRL, the Lebanese state is the owner of natural resources. Article 42 provides that resources shall be split into royalty, cost petroleum and profit petroleum, while article 45 provides that the petroleum company shall be subject to a tax, specified in the Tax Provisions law.

The total produced petroleum is divided into disposable petroleum and royalty. The royalty is different whether the natural resource is gas or oil: it is set to 4% for natural gas, while it is a sliding scale from 5% to 12%, depending on the produced amount, for oil. Disposable petroleum is what is left from the total produced petroleum after deducting the royalty.

Disposable petroleum is then divided into cost petroleum and profit petroleum. Cost petroleum is the share of petroleum dedicated for the company to recover their investment cost; as was mentioned earlier, cost petroleum is a biddable item capped at 65%. Since the bidding results and the EPA are not made public, the cap of cost petroleum of the first offshore licensing round is not known. Profit petroleum is what is left of the disposable petroleum once the cost petroleum is deducted.

Profit petroleum consists of the government's and the investor's profit petroleum. The government profit petroleum ranges between 30% and 55% in block 4 and between 30% and 40% in block 9, as per the respective EPAs. The share of government profit petroleum depends on the R-factor, which is calculated as the cumulative net revenues of petroleum divided by the cost of exploration and development paid by the petroleum company.[22] If petroleum revenues are less than the expenses paid by the petroleum company, the state share of profit petroleum will be 30%, as it is the minimum capped by the EPAs. However, if petroleum revenues exceed expenses, the state share of profit petroleum can range from 30% to 55% (see Appendix 1). The investor profit petroleum is what is left of profit petroleum once government profit petroleum is deducted. As is provided by the Tax Provision law, the investor profit petroleum is subject to a Corporate Income Tax (CIT) of 20%; the net investor profit petroleum is what is left of investor profit petroleum once the CIT has been applied.

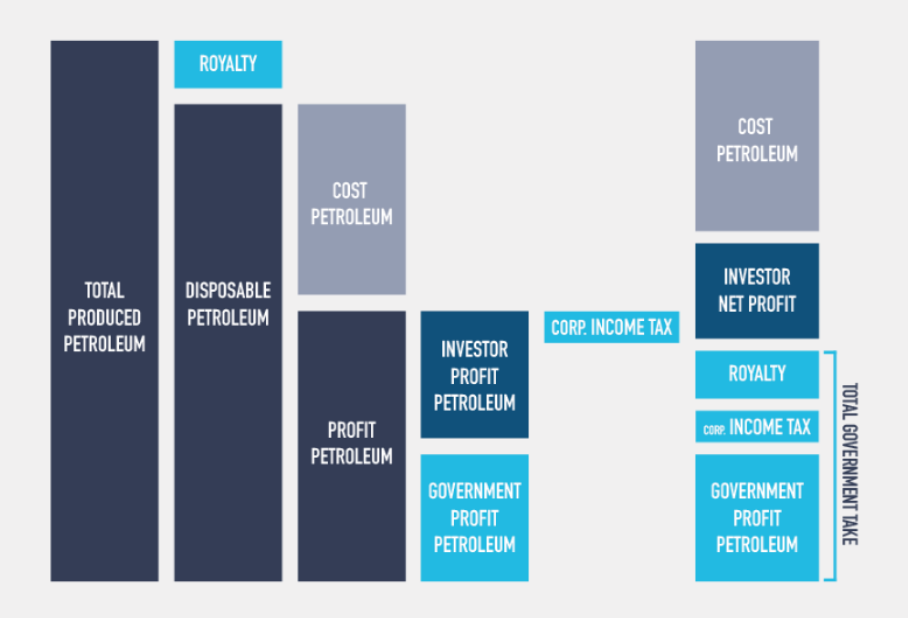


Figure 3 Fiscal regime of the hydrocarbon sector in Lebanon (source: Lebanese Petroleum Association 2020)

[22] R-factor = cumulative net revenues / exploration and development

Therefore, the total government take in the petroleum sector of Lebanon consists of the royalty, the government profit petroleum and the CIT, whereas the total investor take is the cost petroleum and the net investor profit petroleum.

The potential of Lebanon's petroleum sector in the regional context

As was explained in the previous section, Lebanon is one of the last countries to develop its offshore petroleum sector in the Eastern Mediterranean. The Lebanese government became interested in developing the sector around 2009, following Israel's discovery of Tamar, and Cyprus' beginning of offshore explorations. The OPRL was voted in 2010, the LPA was created in 2012 and the PAR and the Prequalification decree were issued in 2013; the legal framework surrounding the Lebanese petroleum sector was almost complete, as the Council of Ministers was working on the last two decrees needed to start the first offshore licensing round, namely the Block delineation decree and the Tender Protocol and Model EPA decree. The government thus proceeded to launch the prequalification round of the first offshore licensing round. However, as was said earlier, former Prime Minister Mikati's Cabinet resigned before signing the aforementioned decrees; Lebanon entered a political deadlock that prevented then-Prime Minister Tammam Salam's newly formed Council of Ministers to issue said decrees. As the latter were needed to move on to the phase of petroleum rights awards, such a delay was fatal to the Lebanon licensing round, which suffered from a 4 years long halt. The first licensing round was able to resume in 2017, after Prime Minister Saad Hariri's Cabinet issued the Block delineation and the Tender Protocol and Model EPA decrees.

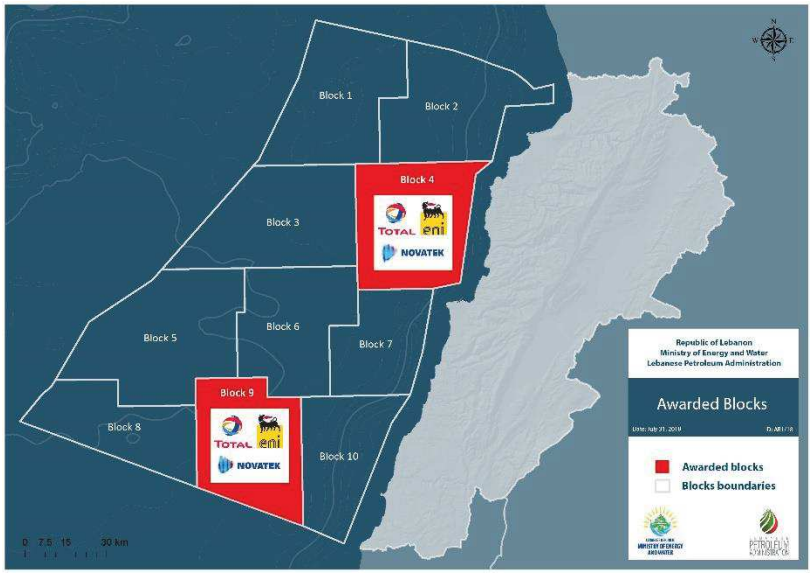


Figure 4 Blocks awarded in the Lebanese offshore area (source: Lebanese Petroleum Association 2020)

The consortium composed of Total, Eni and Novatek was awarded two EPAs for blocks 4 and 9 in February 2018; the group has since begun exploration activities offshore Lebanon. However, the consortium has yet to make a commercial discovery. Lebanon is thus the late bloomer of the Eastern Mediterranean's offshore petroleum sectors; such a deferment could affect prejudicially the development of the Lebanese petroleum sector.

In fact, Israel and Cyprus, Lebanon's closest neighbors, have started developing their offshore petroleum sectors almost a decade earlier. As was explained in the previous subsection, Israel and Cyprus harbour some of the biggest hydrocarbon fields found in the Eastern Mediterranean: Tamar, Leviathan, Aphrodite and Glaucus. Given the fact that such fields were found before any commercial discovery was made in Lebanon, it is safe to assume that the fields will therefore be exploited before any hydrocarbon production is undertaken in Lebanon. The natural gas and oil produced in Israeli and Cypriot fields will therefore reach foreign markets, especially european markets, before any Lebanese production. By the time Lebanon begins exporting hydrocarbons, if any is found, the market could be saturated, and Lebanon might have to rely on regional exports to commercialise its potential hydrocarbons and ensure their competitiveness (Baconi 2017).

However, the licensing terms and fiscal regime governing Lebanon's petroleum sector seems preferable to the ones adopted in Israel and in Cyprus. In fact, experts deem Cyprus' petroleum

regulation as too lenient, while Israel's is considered too strict. Unlike Lebanon, Cyprus does not specify a minimum number of rights holders per block, which can thus allow companies to undertake petroleum activities alone; such an undertaking can prove to be riskier for the company as it will have to carry costs alone. Moreover, fiscal terms in Cyprus are biddable, and the state does not require a royalty to be paid; it requires signature and production bonuses, which are explained by the state's urgent need for revenue, due to its economic crisis (Nakhle 2015). However, such leniency in the establishment of fiscal terms, and an urgent need for revenue can be seen as risk factors for foreign companies, as they are signs of political and economic instability (Fettweis 2009; Mian 2002). The Israeli petroleum regulation, on the other hand, is very strict: it allows very little flexibility which can discourage international oil companies from investing in the petroleum sector (Mian 2002). Moreover, Israel represents a risk for foreign companies as the country suffers from political instability inherent to the regional geopolitical context; besides, petroleum companies fear that investing in Israel might hinder their relations with Arab countries (Nakhle 2015).

Lebanon's petroleum regulation thus represents a middle ground between Cyprus' and Israel's. While no regulation is better than another, as they are designed to fit each country respectively, Lebanon's is deemed as in line with best international practices by experts (International Law and Policy Institute 2013; Lebanese Oil and Gas Initiative 2018). Lebanon's choice of undertaking competitive bidding enhances the transparency of the petroleum sector, which in turn increases foreign companies' prospect of investment. Moreover, the Lebanese fiscal terms are flexible enough to attract petroleum firms, but strict enough to guarantee maximal government share. While Lebanon does not benefit from optimal political and economic conditions, it is perceived as being safer than Israel, as there is no armed conflict currently ongoing in the country. Besides, seeing as Lebanon's petroleum sector is nascent, whereas Israel and Cyprus' is already a decade old, the Lebanese offshore holds more potential for future discoveries, which might instill interest from petroleum firms. In the long term, Lebanon might thus benefit from a stronger interest from petroleum firms than its neighbors, making it more prone to foreign investments in its petroleum sector.

Section B- The Eastern Mediterranean: a complex energy landscape

Hydrocarbon explorations in the Eastern Mediterranean are not recent; Israel, Egypt, Syria, Lebanon and the occupied Palestinian territories have been conducting onshore explorations for decades (Darbouche, El-Katiri, and Fattouh 2012). Offshore exploration activities are not recent either as they have started in the early 1970s, when wells were drilled off the coasts of Israel but were found dry (Tagliapietra 2013). The first offshore hydrocarbon discoveries were made in 2000 along the coasts of Israel and the occupied Palestinian territories; however, such discoveries have started multiplying after 2009, leading to a gas revolution in the region (Amsellem 2016; Darbouche, El-Katiri, and Fattouh 2012; Huet 2013). Such a surge has prompted the U.S. Geological Survey to publish a report assessing the undiscovered oil and gas resources in the Eastern Mediterranean in 2010. The report provided an estimate of the hydrocarbon resources located in the Levantine Basin, off the shores of Lebanon, Syria, Israel, Cyprus, and the Sinai Peninsula. The volumes of undiscovered recoverable hydrocarbons were estimated at a mean of 3,450 bcm of natural gas and 1,7 billion barrels of oil (Schenk et al. 2010). Such a study has encouraged the Eastern Mediterranean states to persist in conducting offshore exploratory activities in order to discover the remainder of the hydrocarbons (Baccarini and Karbuz 2016).

The discovery of hydrocarbons in Eastern Mediterranean states

It is crucial to recount the history of offshore hydrocarbon discoveries in the Eastern Mediterranean in order to analyze the regional energy geopolitics. In the context of this study, it was decided that the assessment of hydrocarbon discoveries be limited to territories of the Eastern Mediterranean. The offshore findings of Israel, the occupied Palestinian territories, Cyprus and Syria will therefore be discussed in their entirety. As for Egypt, only the hydrocarbon discoveries offshore the Sinai Peninsula will be considered, as the remaining findings do not fall under the scope of this study. Moreover, the subject of Turkey will only be tackled in the context of its territorial conflict with Cyprus.

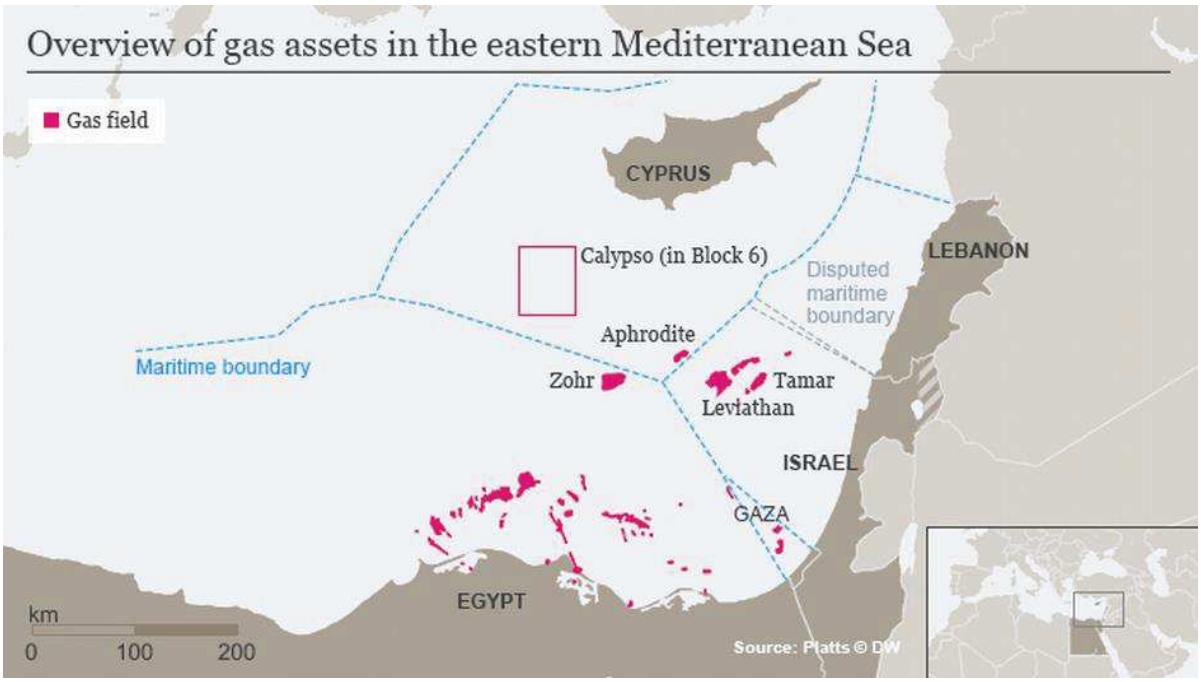


Figure 5 Map representing the gas fields discovered in the Eastern Mediterranean until 2018 (source: Deutsche Welle 2018)

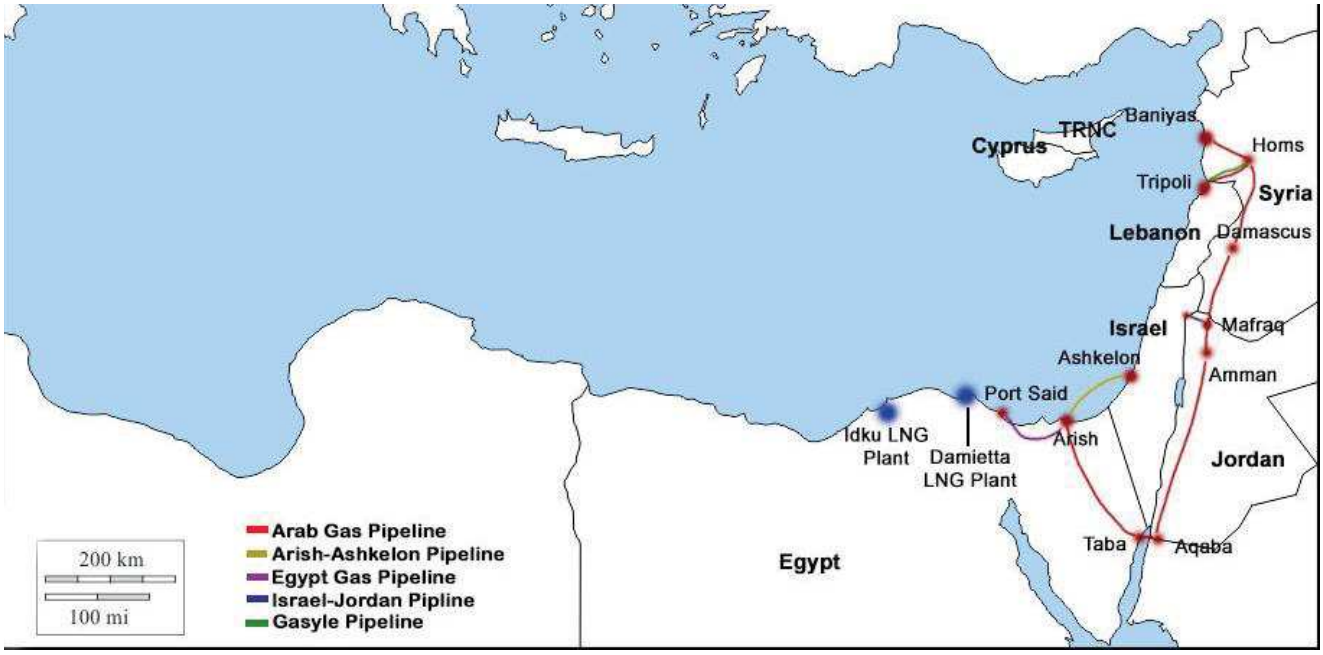


Figure 6 Pipelines and LNG plants in the Eastern Mediterranean (source: author)

a. The State of Israel

Israel was a forerunner in hydrocarbon explorations as it started its petroleum activities immediately after its creation in 1948. Israel was isolated from its Arab neighbors; its lack of domestic hydrocarbon resources meant it was heavily reliant on foreign energy imports, and on regional energy routes (Darbouche, El-Katiri, and Fattouh 2012; Huet 2013). Israel drilled more than 500 onshore wells but did not make any breakthrough. Israel started its offshore hydrocarbon explorations in 1969; such activities were led by an Israeli-American consortium composed of the American company Noble Energy, and the Israeli company Delek Group. The consortium made its first discovery in 1999 with the Noa field, shortly followed by the finding of Mari-B in 2000, respectively containing around 1.15 and 31 bcm of natural gas (Darbouche, El-Katiri, and Fattouh 2012). Although modest, the discovery of the Mari-B field implied significant changes for the Israeli energy policy and security. On one hand, it indicated that Israel could diversify its energy mix by including a larger percentage of natural gas (Amsellem 2016). On the other, it meant that Israel was now able to rely on its own hydrocarbon resources for its energy production, after decades of foreign dependency (Amsellem 2016; Tagliapietra 2013).

In the 1950s, Israel was heavily reliant on Iranian oil imports, which amounted to around 60% of its internal consumption. However, such imports were strongly reduced after the shutdown of the Suez canal due to the Arab-Israeli war of 1967 (Huet 2013). The 1967 war led to the Israeli occupation of the Sinai Peninsula; such a situation gave Israel access to onshore hydrocarbon resources until the land was returned to Egypt in 1980 (Smith 1975). The Camp David Accords, which formalized Israeli-Egyptian peace, comprise an energy chapter, prescribing the right of Israel to buy oil produced by Egypt and not necessary to the country's domestic consumption (Arab Republic of Egypt and State of Israel 1978).

The first Israeli offshore discovery gave Israel the opportunity to halt its heavy reliance on foreign hydrocarbon imports. The exploitation of the Mari-B started in 2004; the field supplied Israel with natural gas until its total depletion in 2012 (Huet 2013). Israel continued its hydrocarbon explorations after the discovery of Mari-B but did not make any breakthrough until 2009. An Israeli-American consortium composed of Noble Energy, Delek Group, Isramco Negev and Dor Gas Exploration discovered the Tamar gas field, which lies 90 kilometers off the coast of northern

Israel (Amsellem 2016; Darbouche, El-Katiri, and Fattouh 2012)Such a discovery was substantial as the field harboured around 285 bcm of natural gas; Tamar could thus satisfy Israel's domestic natural gas demand for decades (Amsellem 2014; Tagliapietra 2013). In 2016, more than 60% of the electricity produced in Israel came from Tamar's natural gas (Baccarini and Karbuz 2016).

The discovery of the Tamar field transformed the natural gas game in the Eastern Mediterranean region, and prompted neighbouring Lebanon, Cyprus and Syria to focus on offshore hydrocarbon exploration correspondingly to Israel (Amsellem 2013). In 2010, the consortium composed by Noble Energy, Delek Group and Avner Oil Exploration discovered the largest Israeli gas field, Leviathan. Located 135 kilometers offshore the northern Israeli city of Haifa, Leviathan is estimated to hold approximately 480 to 565 bcm of natural gas (Darbouche, El-Katiri, and Fattouh 2012). The development of the Leviathan gas field, whose resources will be primarily directed towards exports, has been delayed due to domestic institutional deadlock (Baccarini and Karbuz 2016; Benfriha 2019). Exploration activities were adjourned until 2016; gas production started in late December 2019, 9 years after the initial discovery of the Leviathan field (Offshore Energy 2019c). Since 2010, numerous smaller hydrocarbon fields were found off Israeli coasts: Dolphin, Tanin, Shimshon, Pinnacles, Karish, Royee, Sarah and Mira, to cite a few (Amsellem 2016; Huet 2013). The size of Israeli natural gas findings are substantial as they amount to more than 850 bcm, thus allowing Israel to be self-sufficient while leaving additional quantities to be exported (Darbouche, El-Katiri, and Fattouh 2012). In 2012, the Hadera Deepwater LNG terminal, Israel's first floating storage regasification unit (FSRU)[23] became operational (Excelerate Energy 2012). The Israeli government also explored the potentiality of building an onshore LNG export terminal on the proposed sites of Ashdod, Eilat and Ashkelon; such ambitions were met by strong public opposition regarding their environmental and residential impacts (Tagliapietra 2013). Moreover, the aforementioned cities all face technical problems as they are not spacious enough for LNG tankers maneuvering. Despite such obstacles, ExxonMobil engaged in talks with the Israeli government in April 2019 for the building of a floating LNG export platform (Benmeleh 2019).

[23] FSRUs are a type of ships that are essential to LNG imports. Such ships allow the importer to store and to regasify LNG to then incorporate in their energy mix.

b. The occupied Palestinian territories

In 1999, the Palestinian Authority awarded the company British Gas the right to explore its entire offshore area. The exploration licence led to the discovery of the Gaza Marine field in 2000, harbouring around 42 bcm of natural gas (Huet 2013). The gas field was found 20 nautical miles off the coast of Gaza, in the territorial waters awarded to the Palestinian Authority by the Oslo Accords. Such a finding was initially well received by the Israeli government, as importing Palestinian gas would alleviate the strain on the Mari-B field (Amsellem 2016). The rise to power of Hamas and the beginning of the second Intifada in 2000 put a halt to all the hydrocarbon plans, projects and activities regarding the Gaza Marine field (Amsellem 2016; Macaron 2018). The Palestinian Authority approved of a plan to exploit hydrocarbons with British Gas in 2002; negotiations started with Israel, but quickly broke down as the Israeli government asked for the total control of gas flows from Gaza Marine and cash revenues to the Palestinian Authority (Darbouche, El-Katiri, and Fattouh 2012). The exploitation of the Gaza Marine field is therefore hampered by the actual political and legal deadlock between the Palestinian Authority, which will be further detailed in this section.

The exploitation of Gaza Marine could be highly beneficial for the Palestinian natural gas demand outlook. The Palestinians are totally dependent on Israel for the energy supply and are currently attached to the Israeli power grid (Baconi 2017). Electricity supply to Gaza and the West Bank are subject to several disruptions, which prompts Palestinians to get their energy supply from IPPs. In 2002, the Gaza Electricity Development Company was created, allowing the supply of 140 MWh per day, which represents half of the Gazaoui energy consumption, through the Nousseirat power plant (Huet 2013). However, the plant was destroyed by the Israeli army in 2006, and only ensures half of its past generation capacity since it has been rebuilt. Moreover, Israel has been repeatedly blocking fuel deliveries to the Nousseirat power plant over the last decade (Kubovich 2019).

Gaza Marine is economically substantial for the Palestinian Authority; the field could yield around $2,4 billion USD in royalties, and the produced hydrocarbons would allow the Palestinian Authority to save around $540 million dollars USD per year on the purchase of Israeli fuel oil (Huet 2013). The exploitation of Gaza Marine would allow the occupied Palestinian territories to grow economically, thus enhancing the quality of life of the Palestinians (Baconi 2017;

Tagliapietra 2013). Israel's refusal to sanction the development of the Gaza Marine field has led to the withdrawal of British Gas from negotiations in 2012; such disengagement will probably result in the sale of the group's stake (Darbouche, El-Katiri, and Fattouh 2012).

c. The Republic of Cyprus

The Cypriot island is divided in two distinct republics: the Republic of Cyprus in the south, also referred to as Cyprus, which is internationally recognized by the United Nations, and the Turkish Republic of Northern Cyprus (TRNC) in the north, which is only recognized by Turkey. Inhabitants of Cyprus are often referred to as Greek Cypriots, whereas inhabitants of the TRNC are referred to as Turkish Cypriots. Both the Republic of Cyprus and the TRNC are in the midst of an important territorial conflict, which will be further detailed in this section.

The Republic of Cyprus is heavily dependent on oil imports for its electricity generation; in fact, oil represented almost 95% of its entire energy mix in 2017 (International Energy Agency 2019a). The Republic of Cyprus and the TRNC have concluded a joint electricity-sharing agreement aiming to provide access to Greek Cypriots to cheaper Turkish gas, while reducing the power blackouts of Turkish Cypriots by furnishing them wind-power generated electricity (Bryza 2018). Cyprus had been facing a drastic decrease in electricity production due to the explosion of its Vassilikos power plant in 2011. The Cypriot government subsequently began a project of regasification of the economy in order to enhance Cyprus' energy security by diversifying its energy sources, but also to help limit the consequences of energy consumption on the environment (Darbouche, El-Katiri, and Fattouh 2012). The European Investment Bank provided Cyprus with numerous loans amounting to more than €350 million EUR; such lendings allowed the Cypriot government to rebuild its electric grid (European Investment Bank 2010).

Cyprus has conducted various hydrocarbon activities since 2010, as natural resources were seen as the way out of the economic crisis that has been experienced in the country (Huet 2013). Such activities were fruitful as the first Cypriot gas field, Aphrodite, was discovered in 2011 by Noble Energy, Delek Group and Royal Dutch Shell. Located 180 kilometers away from the coasts of northern Cyprus, and 65 kilometers west of the Israeli Leviathan field, Aphrodite holds a mean value of 200 bcm of natural gas (Darbouche, El-Katiri, and Fattouh 2012; Offshore Energy 2019b).

The field, which will produce its first gas in 2023, will allow Cyprus to satisfy its national energy demand; however, the exploitation of the Aphrodite field has been delayed as the consortium companies have renegotiated the terms of their Production Sharing Agreement with the Cypriot government (Kambas and Zawadzki 2019). The discovery of Aphrodite alone did not allow the Cypriot government to plan ambitious hydrocarbon projects and infrastructure (Baccarini and Karbuz 2016). In 2014, Cyprus' energy minister George Lakkotrypis announced that Aphrodite's reserves were lower than expected, and thus insufficient to justify the construction of a Cypriot LNG terminal (Bryza 2018).

Such a given was changed by the discovery of the Calypso field by the consortium composed of Eni and Total in 2018; Calypso and Aphrodite are considered to have a similar capacity of 200 bcm (Benfriha 2019; Kambas 2018). Shortly after, the Glaucus field was discovered by ExxonMobil and Qatar Petroleum; according to Lakkotryppis, Glaucus is believed to be the largest hydrocarbon field discovered off the coasts of Cyprus, with its estimated 225 bcm of natural gas (Kambas and Zawadzki 2019; Offshore Energy 2019b). In December 2019, Cyprus signed a deal with a consortium led by China Petroleum Pipeline Engineering to build a FSRU off the port of Vassilikos, thus allowing the country to import LNG (Financial Mirror 2019).

d. The Arab Republic of Egypt

Egypt is the country that has been exporting natural gas for the longest time in the Eastern Mediterranean region (Baccarini and Karbuz 2016). However, the region has been a limited import market for natural gas: in 2010, Lebanon, Syria and Israel combined imported a total of 2.85 bcm of gas from Egypt via pipeline (Darbouche, El-Katiri, and Fattouh 2012). Egypt possesses the region's largest international gas transport infrastructure. It is composed of two LNG plants in the cities of Damietta and Idku, and three pipelines, the Arab Gas Pipeline, the Arish-Ashkelon pipeline and the Sumed pipeline (Saba 2020). The Sumed pipeline will not be detailed as it is not part of the Eastern Mediterranean hydrocarbon infrastructure.

The Damietta onshore LNG complex is located 60 kilometers away from the city of Port Said; it came on stream in 2004 and is owned and operated by the Spanish and Egyptian Gas company (SEGAS), which is composed by the Egyptian Natural Gas Holding Company (EGAS), the

Egyptian General Petroleum Corporation (EGPC) and the Union Fenosa Group, which is itself a joint venture between companies Eni and Naturgy (Mechademy 2019; Tagliapietra 2013). The Damietta LNG plant has one LNG train[24] with a total capacity of 4,8 million tons of LNG per year. Eni, BP and EGAS signed an agreement in 2007 for the construction of a second LNG train; however, the project was postponed due to limited natural gas quantities available for export (Upstream Online 2009). Such a decline in exportable natural gas combined with Egypt's political unrest in 2011 due to the Arab spring uprisings led to the shutdown of the Damietta LNG complex in 2013 (Mechademy 2019). In February 2020, the companies operating SEGAS reached an agreement to restart the Damietta LNG plant; the deal collapsed two months later following a drastic decline in natural gas prices due to the COVID-19 pandemic crisis (S&P Global Platts 2020).

The Idku onshore LNG plant is located 50 kilometers away from the city of Alexandria; the complex is owned by Egyptian LNG, which is composed by EGPC, EGAS, BG Group, Petronas and ENGIE (Hafner, Tagliapietra, and El Elandaloussi 2012). The Idku LNG plant has two active LNG trains with a capacity of 3,6 million tons of LNG per year each; the complex could be expanded to accommodate up to 6 LNG trains in total (Tagliapietra 2013). However, the plant has been operating below its maximum capacity since its commissioning in 2005 due to a lack of sufficient domestic gas production (Offshore Energy 2019a). In April 2020, the Egyptian government halted exports from the Idku LNG complex in order to thwart economic losses due to the decline in natural gas prices following the COVID-19 pandemic (Stevenson 2020).

The Arab Gas Pipeline is a 1200 kilometers long infrastructure linking Egypt to Jordan, Syria and Lebanon; Egyptian natural gas exports to Jordan started in 2003, reaching Syria and Lebanon in 2008 and 2009 respectively. The pipeline has a capacity of 9.9 bcm per year; however, it has been operating below this maximum capacity (Hafner, Tagliapietra, and El Elandaloussi 2012). The Arab Gas Pipeline has been inoperable since 2012, due to repeated attacks on its infrastructure in the Sinai Peninsula. The Arish-Ashkelon pipeline is a 90 kilometers long submarine pipeline

[24] An LNG train is an LNG plant's purification and liquefaction facility. Each LNG plant can have more than one train. In order to be transported more easily, natural gas is liquefied; however, it has to be purified beforehand in order to prevent impurities from freezing during the liquefaction process.

connecting Egypt to Israel. It has a capacity of 6.7 bcm per year and is owned and operated by the Eastern Mediterranean Gas Company (EMG), an Egyptian and Israeli joint stock company, owned 39% by Delek Group since September 2018 (Eran 2018). Similarly to the Arab Gas Pipeline, the Arish-Ashkelon pipeline has also been subject to repeated attacks since 2011. The sabotage acts perpetrated on Egyptian hydrocarbon infrastructure are linked to Egypt's government change, combined with the increase of Libyan arms sale; such attacks were conducted by bedouins in the Sinai Peninsula, following the demilitarization of the zone (Huet 2013; Kostrz 2012).

Egyptian gas supply has been erratic since 2011 due to the recurrent attacks and sabotage on the country's energy infrastructure. Such a situation has led to power disruption and outages in Syria, Israel and Jordan, thus menacing the energy security of such countries while calling Egypt's reliability as a regional gas supplier into question (Darbouche, El-Katiri, and Fattouh 2012; Huet 2013; Tagliapietra 2013). Besides, regime change in Egypt and Morsi's access to power in 2011 provoked the degradation of Egyptian-Israeli relations; Egyptian gas supply to Israel was halted following public pressure and allegations of breach of contract between the two states (Darbouche, El-Katiri, and Fattouh 2012; Tagliapietra 2013).

Moreover, Egypt's domestic energy demand has been drastically increasing since the beginning of the 2010s and the Egyptian hydrocarbon production could not satisfy such an energy demand anymore; such a situation contributed to the diminution of Egypt's natural gas exports (Amsellem 2016; Weiss 2019). The augmentation of domestic energy demand also prompted the Egyptian government to import hydrocarbons in order to satisfy the country's energy needs; Egypt turned from a regional gas exporter to gas importer in 2015 (U.S. Energy Information Administration 2020). In January 2020, Egypt started to import natural gas from Israel's Leviathan for its domestic consumption (Suleymanova 2020).

In August 2015, the Zohr hydrocarbon field was discovered offshore Egyptian coasts; with its 850 bcm of natural gas, Zohr is the most substantial discovery made in the Eastern Mediterranean until this day (Amsellem 2016; Baccarini and Karbuz 2016). The Zohr field was brought on stream in late 2017; such gas production allowed Egypt to advance towards self-sufficiency (Weiss 2019). In 2019, gas production from Zohr reached 2,7 bcf per day, thus allowing Egypt to resume regular

LNG exports; approximately 3.11 bcm of natural gas was exported from the Idku LNG complex since the beginning of 2019 (ENI 2020; S&P Global Platts 2019).

e. The Syrian Arab Republic

The Syrian government profits from numerous onshore hydrocarbon fields in the eastern part of its territory. Syria had the most substantial share of natural gas in its energy mix due to its high domestic production; Syrian natural gas reserves were of 300 bcm in 2011 (Darbouche, El-Katiri, and Fattouh 2012). Syria was also one of the first states to export natural gas in the Eastern Mediterranean region, alongside Egypt; the state produced a considerable 9.35 bcm of natural gas in 2010 (International Energy Agency 2020). The Syrian government had signed a 25-year long contract to export natural gas to Lebanon through the Gasyle pipeline, which was completed in 2005; the contract was discontinued due to Syria's inability to meet supply demand (Ghoble 2018).

Syria's interest in its potential offshore hydrocarbon resources peaked in the beginning of the 2000s. The company CGG Veritas completed Syria's first offshore 2D seismic survey in 2005 (de Boncourt 2013). Such a survey subsequently led to the establishment of a bidding round for four of Syria's offshore blocks in 2007; however, the process failed as no licenses were awarded (Darbouche, El-Katiri, and Fattouh 2012). Another bidding round was initiated in 2011 and was subsequently cancelled due to the beginning of the Syrian civil war a few months later. Syria produced 380,000 barrels of oil per day prior to the unfurling of the conflict in its highly hydrocarbon productive region, located in the east of its territory (Makieh and Francis 2019). The Syrian oil fields then fell in the hands of Kurdish fighters; the latter seized the territory in control of Daesh with help for the United States' army. Despite the government having gained back control of some hydrocarbon fields in the Deir ez-Zor province, the country's production is currently at an all-time low, with a crude oil production of 961 ktoe and a natural gas production of 4 bcm in 2017 (International Energy Agency 2020). Such numbers represent less than 10% of Syria's pre-civil war hydrocarbon production (Arab News 2020).

In 2013, the Syrian Ministry of Oil and Natural Resources concluded a contract for offshore exploration and exploitation with the Russian company Soyuzneftegaz; the firm abandoned the project in 2015, claiming the risks associated with the political context were too high (Al Manar

2019; Baccarini and Karbuz 2016; Shurmina and Lyrchikova 2015). The violent endeavors undertaken by the Syrian government during the civil war led to the establishment of grave sanctions against Syria by the United States and the European Union. Both entities prohibit the purchase and importation of hydrocarbon products originating from, or transiting by Syrian territory (Council of the European Union 2012; United States Department of State 2017). American and European firms working in Syria's hydrocarbon industry were therefore obligated to abandon their projects; moreover, other companies deemed wiser to abandon such projects as the produced hydrocarbons could not have been exported to American and European markets. Besides, the Syrian hydrocarbon infrastructure was extremely damaged during the civil war; the government does not have the sufficient capital to undertake repairs and therefore relies on its allies for this matter. Iran also lacks the funds to rehabilitate such deterioration; alternatively, Russia would be able to cover the elevated cost of repairs, totalling close to $35-40 billion USD (Katona 2018). Such costs keep on increasing as a bomb planted off the coast of the city of Banias exploded in late January 2020, thus damaging infrastructure vital to pump oil to Syria's onshore refineries (Arab News 2020). Sanctions imposed on Syria do not discourage Russia, as the country itself already is subject to American and European sanctions following the Russian annexation of Crimea in 2014.

The Syrian General Petroleum Corporation signed three contracts with the general managers of Russia's Velada LLC and Mercury LLC during the 61st Damascus International Fair in September 2019. Such contracts plan the surveying, drilling and production of onshore hydrocarbons in Syria's central and eastern regions (Azhari 2019c). The hydrocarbon agreements were approved by Ali Ghanem, the Syrian Minister of Oil and Natural Resources; Ghanem declared that such contracts were the result of a joint economic cooperation between Syria and Russia, the two states having established a roadmap between their energy ministries in 2018 (Muraselon 2019). The Syrian government has also been accelerating its offshore hydrocarbon activities since the opening of Lebanon's second offshore licencing round; Oil and Natural Resources Minister Ali Ghanem expects the first hydrocarbon production, which will be carried out by a Russian firm already operating onshore Syria, to begin by 2023 (Azhari 2019b; Nour 2019).

Geopolitical shifts following hydrocarbon discoveries

Eastern Mediterranean states have deep anchorage in hydrocarbon exploration and exploitation. Although such activities have ameliorated states' economies and energy security, they have often contributed to, and sometimes directly provoked the heightening of interstate tensions and disputes. In the beginning of the 21st century, the Eastern Mediterranean was characterized by Israel's salient alliances with Turkey, Egypt and Jordan; however, such strong relationships began to deteriorate in the early 2010s.

The dispute between Israel and Turkey started in 2009 as the latter changed its geopolitical stance to operate a rapprochement with Syria, Iraq and Iran (Amsellem 2014). The Turkish government thus showed its discontent regarding Israel's Operation Cast Lead, which caused the death of more than 1,400 Palestinians; Erdogan publicly criticized Peres at the 2009 Davos World Economic Forum (Amsellem 2016; Institute for Middle East Understanding 2012). Two incidents in 2010 led to the further degradation of Israel and Turkey's relations. First, the Cypriot Minister of Defense and the Israeli ambassador to Cyprus organized a meeting aiming to reinforce Israel and Cyprus military cooperation. Such a convocation was particularly offensive to Turkey, as it does not recognize the Republic of Cyprus; moreover, Turkey and Israel were until then privileged military allies and the two states used to conduct military exercises together (Amsellem 2013). The second incident was the Gaza flotilla raid by the Israeli army on a civilian ship from Turkey; the raid caused the deaths of 9 Turkish civilians (Huet 2013). Such events led to the rupture of all diplomatic, commercial and military ties between Israel and Turkey; it also put a halt to Israel's ambitions of exporting natural gas to Europe through Turkey (Amsellem 2016). The rupture also led to the abandonment of the multipurpose Medstream pipeline project, a prolongation of the proposed Blue Stream II pipeline; the pipeline would have transported hydrocarbons, electricity, water and fiber optics from Turkey to Israel (Cohen and DeCorla-Souza 2011; Huet 2013). The two states revived their diplomatic ties in 2015, following Israel's apology for the flotilla incident; however, the relations are not as strong and stable as they were in the past (Baconi 2017).

The Cast Lead Operation was also highly criticized by the Egyptian public opinion. The government of Hosni Moubarak succeeded in muting the opposition; however, the Arab Spring signed Moubarak's demise in favor of Morsi, an Islamist affiliated with the Muslim Brotherhood organization, of which Hamas is the Palestinian branch (Amsellem 2014). Morsi's government wanted to distance Egypt from Israel; similarly, the Israeli government was reluctant to engage

with the new Egyptian administration. Egyptians were not in favour of their government's cheap energy supply to Israel. Egypt's growing energy demand and the repeated sabotages against its hydrocarbon infrastructure, combined with Israel's gas payment delays, and its indemnisation demands following the repeated supply interruptions led the Egyptian government to halt its hydrocarbon supply to Israel in 2012 (Huet 2013, 20). Such a deterioration in relations halted Israel's intentions of exporting gas to Egypt through the Arish-Ashkelon pipeline, for it to be liquefied and then exported through Egyptian LNG terminals (Amsellem 2016). Sissi's accession to power in Egypt led to the normalization of relations between the state and Israel. As was said previously in this section, Israel currently exports natural gas to Egypt.

Tensions between Israel and Jordan began to escalate in July 2017, after Israel placed metal detectors at the entrances of the al-Aqsa compound; such a decision was perceived as an undermining of Jordan's role as the guardian of Muslim holy places in Jerusalem (Baconi 2017). Moreover, an Israeli guard at the Israeli embassy in Jordan killed two Jordanian civilians under unclear circumstances; the guard was then welcomed as a hero by Netanyahu in Israel after his extradition (Zalzberg 2020). Such events instilled mistrust from Jordan towards Israel, thus casting a shadow over the two states' energy cooperation. In fact, the Jordanian and Israeli governments concluded a deal to construct a pipeline that will transport $10 billion USD worth of natural gas over 15 years (Tayseer and Benmeleh 2018). The tensions between the two countries led to the increase of public anger in Jordan; opponents of the gas deal claim that the latter will decrease Jordan's energy security as it will render the state more dependent on Israeli supply (Baconi 2017).

The disputes between Israel, Turkey, Egypt and Jordan were not initiated by hydrocarbons, but had consequences on the hydrocarbon projects and the energy security of the involved states. However, in the case of the conflicts between Lebanon and Israel, Gaza, and Israel and Turkey and Cyprus, hydrocarbons led to the heightening of tensions by adding a new layer to the already complex political disputes.

The United Nations Convention on the Law of the Sea (UNCLOS) of 1982 has set a universal framework for the management of offshore resources. UNCLOS defines areas where the coastal states can freely exercise their sovereignty, while establishing rights and obligations that each must respect. The maritime zoning diagram (see Appendix 2) clearly states that each littoral country

profits from its own EEZ, which extends 200 nautical miles starting from its land; this gives them the right to explore and exploit the resources present in this maritime territory. Offshore oil and natural gas fields located in a state's EEZ are therefore legally exploitable by the state they belong to (UN General Assembly 1982). The Mediterranean Sea being very narrow, not at states benefit from the full 200 nautical miles EEZ; maritime borders thus have to be delimited by bilateral agreements between the concerned states. The Mediterranean Sea has historically been subject to litigation related to the geostrategic issues it represents. The discovery of oil and natural gas deposits have only aggravated the tensions linked to the sharing of borders.

The conflict between Turkey and Cyprus is historically inscribed in the Greco-Turkish rivalry. Following communitarian problems between Greek Cypriots and Turkish Cypriots, the Turkish army invaded the north of Cyprus and established the TRNC in 1974 (Huet 2013). Turkey did not sign UNCLOS and denies the rights of coastal states, especially islands such as Cyprus and Greece, to have an EEZ; the Turkish government argues that zones of privilege should not be established in a sea as closed as the Mediterranean (Global Security 2020). The TRNC has not signed UNCLOS either as it is not recognized internationally and is therefore not a member state of the United Nations. Turkey and the TRNC claim sovereignty over Cyprus' EEZ; both entities have called for the halt of hydrocarbon related activities in the absence of a political settlement regarding the territorial dispute (Darbouche, El-Katiri, and Fattouh 2012).

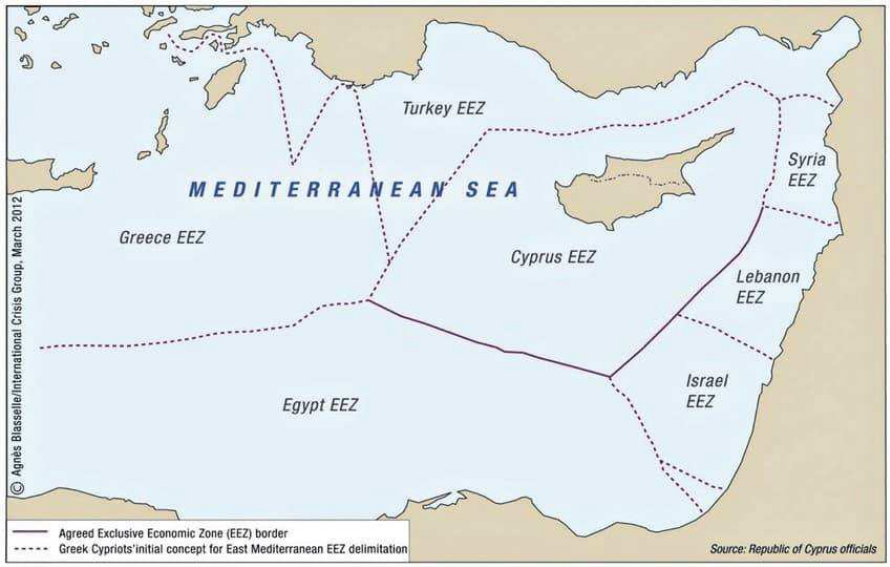


Figure 7 Exclusive Economic Zone of Cyprus (source: International Crisis Group 2012)

Cyprus has delimited its maritime borders with Egypt, Lebanon and Israel in 2003, 2007 and 2010 respectively; the TRNC was not invited to such negotiations. Turkey and the TRNC therefore consider that such agreements do not represent the interests of Turkish Cypriots; both entities also claim that the agreements hinder hopes of reunification of the island (Baccarini and Karbuz 2016). Following the discovery of the Aphrodite gas field in 2011, the Turkish government has threatened to blacklist the firms that would engage in hydrocarbon activities in Cyprus' EEZ, in an attempt to halt the exploitation of the waters (Tagliapietra 2013). Moreover, the TRNC gave the Turkish Petroleum Company the rights to explore and exploit Cyprus' northern waters (Amsellem 2013; Darbouche, El-Katiri, and Fattouh 2012; Huet 2013).

As was said earlier, Cyprus signed an agreement in 2007 to delimit its maritime boundary with Lebanon; however, this accord is flawed as it does not represent Lebanese interests nor UNCLOS principles of equidistance, and it was therefore never ratified by the Lebanese Parliament (Darbouche, El-Katiri, and Fattouh 2012). Article 3 of Lebanon and Cyprus' agreement states that each party should notify the other before establishing definite maritime boundaries with another state, if such borders pass by coordinates 1 or 6 (Huet 2013; MEES 2012). However, Cyprus signed an accord with Israel in December 2010; the latter, being non-signatory to UNCLOS, had never defined its maritime borders prior to engaging in exploration and exploitation activities (Amsellem 2013). Such an agreement was made without consulting Lebanon, although it regards said coordinate 1. Lebanon therefore contested the agreement between Cyprus and Israel and proceeded to unilaterally declare its own maritime boundaries to the UN in August 2010 (Amsellem 2016; Permanent Mission of Lebanon to the United Nations 2010). Lebanon's declaration sets its southern maritime border to point 23, which thus creates a 850 square kilometers overlap with Israel's claims (Abdul Rahim, Godart, and Eid 2017; Amsellem 2014; Huet 2013). Lebanon then asked Cyprus to amend its agreement with Israel since it reflects erroneous border claims, but the Cypriot government refused (Darbouche, El-Katiri, and Fattouh 2012).

Figure 8 Disputed maritime zone between Lebanon and Israel (source: author)

Article 34 of the Vienna Convention on the Law of Treaties claims that a treaty does not create obligations for a third state without its consent (United Nations 1969). If two states sign a treaty agreeing on their maritime boundaries, such as Cyprus and Israel, it does not obligate a third state, such as Lebanon, to abide by said boundary. Such a principle is still relevant although neither Lebanon nor Israel are parties to said convention. Moreover, Israel's coordinate deposit to the United Nations states in its first note that coordinate 1 could be reviewed and modified in order to reach an agreement between the three states regarding the delimitation of their EEZs (Aboultaif 2017; Permanent Mission of Israel to the United Nations 2011).

Such a dispute adds a maritime dimension to the ongoing conflict between Lebanon and Israel. The two countries have been in a state of war ever since the creation of Israel in 1948. Lebanon and Israel have never agreed on a terrestrial border as they do not recognize one another and therefore do not engage in direct negotiations (Huet 2013; Vogler and Thompson 2015). The current border between the two states is not an international boundary; the demarcation is the UNIFIL's blue line, which represents the line of withdrawal after Israel's invasion of Lebanon during the civil war, and its subsequent retreat in 2000 (Darbouche, El-Katiri, and Fattouh 2012).

Lebanon is also facing another maritime border dispute with its northern neighbour, Syria. The Syrian government published its maritime delimitations in March 2019, following Lebanon's declarations of a second offshore licensing round regarding its blocks 1 and 2, which are near the Syrian border (Azhari 2019b). The Lebanese and Syrian maritime claims thus overlap and create a 400 square kilometers ambiguous zone. Syria is not signatory to UNCLOS and has never unilaterally declared its maritime borders to the United Nations. Prior to the Syrian civil war, a Lebanese committee presided by former Minister Jean Oghassabian attempted to negotiate the demarcation of the border; such a work group failed to deliver as the Syrian government did not fully implicate itself in the process (Nour 2019). In 2017, former Lebanese Prime Minister Saad Hariri attempted to mediate with Russian President Vladimir Putin in order to convince the Syrian government to complete the maritime border demarcation, without success. However, Russia proposed itself as a mediator in Lebanon and Syria's border dispute in June 2019; such a reversal of situation might be linked to Novatek's current participation in Lebanon's hydrocarbon activities (Mardasov 2019).

As was previously mentioned, Gaza discovered a substantial gas field in its EEZ in 2000; such a field was never exploited due to the ongoing maritime border dispute between Gaza and Israel. Palestine did not benefit from state privileges until it was granted the non-member state Permanent Observer status at the United Nations in November 2012. The Israeli government was therefore responsible for setting the limits of Gaza's territorial waters. Article 5 of the Jericho-Gaza 1994 agreement gives the Palestinian Authority jurdisdiction over its territorial waters (Government of Israel and Palestine Liberation Organization 1994). Such territorial waters were set to 20 nautical miles off the coasts of Gaza by the Oslo II accords of 1995 (Government of Israel and Palestine Liberation Organization 1995). However, Israel reduced Gaza's territorial waters after the second Intifada of 2000; it decreased from 20 to 12 nautical miles (Benfriha 2019). Following the Israeli government's Cast Lead Operation in 2008, the Gazan territorial waters were once again reduced, reaching a distance of 3 nautical miles off the coast (Huet 2013). Such a jurisdiction decrease therefore hampers the Palestinian Authority's rights over the Gaza Marine field.

The Eastern Mediterranean region's political instability and maritime border disputes pose the problem of the security of the coastal states' hydrocarbon installations. Israel has been increasing its maritime defense budget over the last decade, in order to protect its hydrocarbon infrastructures

and to monitor the actions of Hezbollah on the other side of the border (Vogler and Thompson 2015). While Hezbollah and Hamas do not have navies, they are heavily armed and could use long range weapons in order to damage oil and gas infrastructures. Turkey, on the other hand, possesses a strong naval force which it did not hesitate to deploy to intimidate Cyprus (Darbouche, El-Katiri, and Fattouh 2012). Lebanon and Cyprus do not have navies; however, Lebanon has been augmenting its sea patrolling capacity for future oil and gas platform protection (Huet 2013; Vogler and Thompson 2015).

Planned regional energy projects

Such an atmosphere of insecurity has prompted states to nurture new alliances in the region. The degradation of Turkey and Egypt's relations with Israel led to the political isolation of the latter in the region. Such events thus urged Israel to operate a rapprochement with Cyprus and Greece (Amsellem 2016). The Israeli-Cypriot-Greek axis is composed of an economic chapter, which particularly regards energy matters and has been named the "energy triangle"; various projects have been proposed to interlink the energy sectors of Israel, Cyprus and Greece.

The proximity of the Israeli and Cypriot offshore gas fields prompted the project of a joint LNG venture between the two governments, in the city of Vassilikos (Amsellem 2014). However, Vassilikos might not be spacious enough to build a plant of at least three LNG trains of 5 million tons per year of LNG each (Tagliapietra 2013). Moreover, Israel has expressed its wish for the LNG plant to be located on its own territory, in order to have control over revenues, and not be dependent on Cyprus (Tsakiris 2012). Besides, as was mentioned earlier, the security of such an LNG plant on Cypriot ground might be problematic due to the state's ongoing conflict with Turkey.

Israel, Cyprus and Greece, in partnership with the European Union, have also established the EuroAsia Electricity Interconnector project. The 1,200 kilometers-long subsea cable, which is estimated to cost €29 million EUR, will link the Israeli, Cypriot and Greek transmission networks (European Commission 2017). The EuroAsia Interconnector (see Appendix 3) is currently under construction and is expected to be operational in 2 or 3 years (EuroAsia Interconnector 2020).

Figure 9 EastMed pipeline (source: Shipping Herald 2019)

Another project proposed by the Israeli-Cypriot-Greek axis is the EastMed pipeline. The EastMed pipeline will be the longest and deepest underwater pipeline ever created; it will allow the transit of gas from Israel to Cyprus, to Greece and finally to Italy (Weiss 2019). The pipeline will therefore be a technological and economic prowess; its cost is estimated to be around €7 billion EUR (Macaron 2019). In December 2017, Israel, Cyprus, Greece and Italy concluded an initial agreement on the EastMed pipeline (Macaron 2018). The project is also backed by the European Commission, which has categorized it as a Project of Common Interest (Amsellem 2016). Such a pipeline is important to the European Union as it represents a chance of diversifying its natural gas sources away from Russia (Baconi 2017). The United States have also shown their support for the pipeline as Secretary of State Mike Pompeo attended a tripartite meeting between Israel, Greece and Cyprus in Jerusalem in March 2019 (Tugwell 2020). Proponents of the pipeline claim that the EastMed pipeline will further cohesion and security in the Eastern Mediterranean region (Benfriha 2019; Weiss 2019). However, EastMed opponents state that the pipeline will be detrimental to regional security, as it will further deteriorate the Israeli-Cypriot-Greek axis' relations with Turkey (Baccarini and Karbuz 2016; Tagliapietra 2013). In fact, Turkey has expressed its opposition to the pipeline, as the latter passes by Cypriot and Greek EEZ, which are regarded by the Turkish government as Turkish territorial waters. Additionally, experts have claimed that the EastMed pipeline was not commercially viable given its initial investment price, but also given Europe's current shift towards renewable energy (Baconi 2017; Macaron 2018; Tagliapietra 2013; Weiss

2019). Despite such warnings, the Israeli, Cypriot and Greek governments have signed the final EastMed pipeline agreement in January 2020; the accord is to be concluded once Italy signs it (Tugwell 2020).

Israel's reconciliation with Egypt and Turkey has revived old projects and given birth to new ones. Sisi's accession to power in 2014 has brought Egypt and Israel closer. Israel's past plan of exporting LNG through Egypt's Damietta and Idku terminals is therefore feasible. Such a project would be a win-win for both Egypt and Israel, as the first will enjoy transit fees and the latter will not have to pay for infrastructure, as it is already existing (Baconi 2017; Weiss 2019). Israel's excuses to Turkey in 2016 regarding the 2009 flotilla incident signed the end of the two states' diplomatic freeze. Talks have been ongoing for the creation of a pipeline that would connect the Israeli offshore fields to Turkey (Baccarini and Karbuz 2016). Israeli natural gas would then be exported to Europe through the Turkish hub. However, Cyprus has vetoed the part of the pipeline that is to pass by its EEZ (Macaron 2018). Moreover, as was said earlier in this section, Israel and Turkey's current relations are not stable enough to be sustainable in the long term (Baconi 2017).

The birth of the Israeli-Cypriot-Greek axis has precipitated a rapprochement between Turkey and Russia. The two states engaged in the planning and negotiation of a subsea pipeline connecting Anapa in Russia to Lulebugaz in Turkey, a city neighboring the Balkan countries (Astakhova and Sezer 2020). However, Turkish and Russian relations have been highly unstable especially since both countries have been directly involved in the Syrian civil war, supporting different sides; diplomatic ties were cut after Turkey shot down a Russian jet in Syria in 2015 (Gotev 2015). An agreement on the construction of the Turkstream pipeline (see Appendix 4) was signed in 2016 after the restoration of Turkey and Syria's diplomatic ties (Bauomy 2020). The pipeline was completed in 2018 and has been operational since January 2020 (Gazprom 2020). Turkstream reinforces Turkey's ambitions of becoming a regional hub for hydrocarbons. The pipeline is also highly strategic for Russia as it enables it to bypass Ukraine, and to deliver an even larger quantity of natural gas to Europe. However, Turkstream is highly contested by both the European Union and the United States, as it allows Russia to keep its monopoly on European gas supply, thus decreasing European states' energy security (Astakhova and Sezer 2020; Bauomy 2020). The low price of Russian gas makes it highly competitive over other suppliers; the Turkstream pipeline will therefore be a harsh competitor for the EastMed pipeline (Weiss 2019).

CHAPTER II: ENERGY RESOURCES: A POISONED CHALICE?

Section A- A source of democratic drawback in Lebanon

Initial reactions to potential energy discoveries

The discovery of Lebanon's potential offshore hydrocarbon fields prompted enthusiasm within the Lebanese government. Many public declarations were made by Lebanese officials, flaunting the newfound hydrocarbon potentiality of Lebanon. Government dignitaries, such as the former Minister of Energy and Water Gebran Bassil, have shared information about the potential resources, with figures of 2,690 bcm of natural gas and 850 million barrels of oil, with a 50% probability (Marcel and Obeid 2018; Wood 2014). Geological potential is one of the main factors of a basin's attractiveness for international investments; it is therefore not uncommon for governments to advertise their geological potential in order to attract international investors (Nakhle 2020; Nuhu, Kim, and Heo 2014). Such a campaign proved successful, as the Lebanese offshore area quickly attracted the attention of big oil companies such as Total, Eni, Shell and Exxon to cite a few (Wood 2014).

Additionally, numerous billboards were erected on the sides of Lebanese highways, some depicting high-speed trains and heralding upcoming change in the Lebanese transportation sector, others portraying families and promising free education and healthcare as well as retirement pension for everyone (see Appendix 5). The Ministry of Energy and Water proclaimed the oil and gas revenue would bring economic independence to Lebanon, covering the public debt and creating jobs (Marcel and Obeid 2018; Wood 2014). The message was clear: Lebanon now had energy resources, and countless benefits would follow such a discovery, and change the course of life in the country. The Lebanese government officials thus started using claims about Lebanon's geological potential in order to win domestic support; such behaviour was deemed as unwise by experts, as it led Lebanese citizens into having high and unrealistic expectations about the nascent Lebanese hydrocarbon sector (Marcel and Obeid 2018; Nakhle 2020). Lebanon is a fragile state, and using false political promises subjects the Lebanese citizens to a fallacious sense of upcoming security. Figures of potential resources circulated by government officials were interpreted as proved reserves by non-experts, which is highly misleading for citizens. Since Lebanon's political

system is rooted in the sectarian socio-political culture[25], claims based on hypothetical riches can lead to and intensify political infighting (Khodr and Uherova Hasbani 2013; Nakhle 2020). The incidence of natural resources, sectarianism and political instability will be further detailed in the second chapter of this study.

Lebanese government officials claimed that the country had rejoined the club of oil-producing states directly after signing the first exploration contracts in 2018. Such behaviour is hasty, and such declarations are misleading. As has been said previously, current estimates surrounding the Lebanese offshore hydrocarbon fields are not concrete, they are only hypothetical. The Lebanese government should not have rushed into displaying the benefits that could result from hydrocarbon revenue before having the results of the exploration activities. Such a situation creates a gap between political promise and political delivery, which could in turn affect Lebanon's reliability in the eyes of foreign investors (Fattouh and El-Katiri 2015)The Lebanese government should have explained to the citizens that the risk of exploration failure is not only existent, but also high. Additionally, the government should have made it clear, from the beginning, that the journey of hydrocarbon production is a lengthy one (Marcel and Obeid 2018). Such a journey can indeed take up to 30 years, as is now clarified on the website of the Lebanese Petroleum Administration, the public institution responsible for the supervision and management of the Lebanese hydrocarbon sector (Lebanese Petroleum Association 2020a). The benefits ensuing from the potential success of exploration activities in the Lebanese offshore which were promised to the Lebanese citizens could therefore take decades to appear.

The Lebanese civil society[26] was quick to show its concerns surrounding the potentiality of hydrocarbon findings in Lebanon. Although it is known for its vigor, the civil society in Lebanon was deeply impacted by sectarianism; its actions and discourse were toned down in order not to offend any religious community, which resulted in its partial paralysis (Kiwan 2013). However, the Lebanese civil society presented a united front regarding the subject of hydrocarbons. Various

[25] Political power is distributed equally among the different confessional groups.
[26] Civil society is defined as the combination of associations and organizations working in the interest of citizens, independently from the state.

actors have expressed their fears surrounding the impact of the hastiness and lack of transparency of the Lebanese government on the energy sector.

The Lebanese civil society fears that the hastiness demonstrated by the Lebanese government surrounding the energy sector, and the long lasting corruption from which Lebanon suffers will make the country prone to the resource curse in the long run. The resource curse is a phenomenon that increases conflict, decreases democratization and perturbs economic stability in resource-rich countries, thus preventing them from benefiting from their natural resource wealth (Natural Resource Governance Institute 2015). Lebanese civil society actors claim that Lebanon could fall prey to the "presource" curse. The latter is defined as the underperformance of economic growth after a commercial discovery is made, but long before any hydrocarbons are produced; it results from the increase of public spending due to the high expectations linked to hydrocarbon production (Courson 2018). As a further matter, petroleum experts affirm that Lebanon has already succumbed to the "pre-presource" curse; the country's economic growth was hampered before a commercial discovery was ever made, as a result of governmental increased spending through borrowing (Atallah 2018; Nakhle 2020).

The discovery of natural resources on the territory of a state can thus have many undesired outcomes. The resource curse is a phenomenon that unfolds in resource-rich countries. Government and public officials will employ corrupt practices in order to profit from the wealth issued from natural resources revenue; the people in power will therefore do anything to remain in power and continue their illicit enrichment (Klare 2009; Nakhle 2020). Officials will therefore increase government spending to kick start the energy sector and to stay in power, which will slow development (Lebanese Oil and Gas Initiative 2017b; Nakhle 2020). The utilization of corrupt practices and the slowing of development will lead to a decrease in democratization and to a perturbation of economic stability, which will increase conflict and instill poverty (Natural Resource Governance Institute 2015). The resource curse therefore is a paradox surrounding the nexus of resource extraction and development, according to which resource-rich countries are not able to benefit from natural resource wealth, and suffer from lower development compared to resource-poor countries (Carbonnier and Brugger 2013).

Some countries are more prone to suffer from the resource curse than others; Lebanon is one of them. The resource curse highly impacts the foundations of peace and democracy as well as the stability of the economy, as it facilitates corruption. Countries suffering from weak governance, social dissolution and teetering economy such as Lebanon are therefore predisposed to suffer from the resource curse, if natural resources were to be discovered and exploited on their territory.

Confessionalism and corruption in Lebanon

Corruption is defined as the use of public or private office for personal gain; corruption can take on many forms, from bribery to illicit enrichment, and can be either done on isolated occurrences or systematically (Lebanese Oil and Gas Initiative 2017b). Lebanon has a blatant history of corruption in its public sector. The state earned a score of 28/100 on Transparency International's Corruption Perception Index of 2019; Lebanon is thus one of the most corrupt countries in the world (Transparency International 2020). Moreover, Lebanon has a score of -1.1 on the 2018 Control of Corruption Indicator[27] of the Worldwide Governance Indicator of the World Bank; such an indicator shows the extent to which public power is exercised for private gain (World Bank 2020).

However, despite the serious impact of corruption on Lebanon, the state has not shown serious efforts on combating such a phenomenon. In fact, Lebanese law does not contain an explicit definition of the term corruption. Corrupt practices are legally understood as the different forms corruption can take, such as bribery, embezzlement, abuse of functions and illicit enrichment and are supposedly sanctioned by the Lebanese criminal law (Lebanese Oil and Gas Initiative 2017b).

The legal anti-corruption framework exists in Lebanon; however, it is not implemented as should be. The Lebanese law on illicit enrichment was voted in 1953 and requires public officials to declare their assets at the end of each of their 4 years mandate; such a time gap between declarations allows for corrupt schemes to be undertaken (Transparency International 2015). Moreover, most public officials do not declare their assets, on the basis that they are assuming the same function as the previous 4 years (Alsharabati and Chaer 2015). Lebanon has signed the United Nations Convention against Corruption (UNCAC) in 2006, which led it to criminalize most corrupt

[27] The Control of Corruption indicator estimates range from -2.5 to 2.5. France, for example, scored 1.4 on the 2018 Control of Corruption indicator.

practices; however, the most active and used corrupt practices in Lebanon have not been criminalized, such as the bribery of foreign public officials and of officials working in international organizations, and the trading-in of influence, which underlines the limited usefulness of such international conventions on national law (Lebanese Oil and Gas Initiative 2017b). In accordance with the principles of the UNCAC, Lebanon has approved a draft law on whistleblower protection in 2018, 10 years after the proposition of said law to Parliament; such a law protects people who disclose corrupt practices from professional and personal harm (Sadek 2019).

In 2017, Parliament voted on the law on Access to Information, which enhances transparency and accountability as it allows oversight on administrative information. In fact, the law on Access to Information allows anyone to request administrative documents from public offices; however, the law has some exceptions which limit the scope of access (Lebanese Oil and Gas Initiative 2017b). The law provides that any denial of access to information can be directly appealed on to the Anti-Corruption Commission. Said Commission is an oversight body responsible for the control of anti-corruption measures in Lebanon; its creation was provided by the law on Access to Information, and the Commission has yet to be created. Other oversight bodies, such as the Supreme Court exist, but their good functioning is impeded by the intricacies of Lebanese politics; the Supreme Court is responsible for the oversight and prosecution of Presidents and Ministers, but it has never exercised its functions ever since its creation in 1926 (L'Orient-Le Jour 2019).

As was mentioned previously, Lebanon's political system is rooted in the sectarian socio-political culture. Lebanon harbors 18 different confessions; following the Lebanese civil war, which unfurled from 1975 to 1990, the distribution of power among sects was codified into the amended constitution (Republic of Lebanon 1990). The composition of the Lebanese political system thus follows strict rules of roles repartition on the basis of sectarian affiliation; it is the confessional system. The President has to be a Maronite Christian, the Prime Minister a Sunni and the Head of Parliament a Shia. The Council of Ministers and the Parliament have to allocate an equitable number of seats to each confession. The Supreme Court, which is supposed to be independent given its oversight role, is also permeated by confessionalism as its membership is conditional to sectarian belonging (Alsharabati and Chaer 2015; L'Orient-Le Jour 2019).

Confessionalism and corruption form a nexus that has destructive effects on Lebanon. Public power is put to the disposition of the different sectarian groups, and allows the leaders of the latter to stay in power and pursue their interests with no regard to the national interest. Such a nexus thus instils weak governance, as public institutions become non-functional, social dissolution, as the nation lacks unity, and bad economy, as national debt skyrockets. Such characteristics make Lebanon prone to the resource curse, as they push public officials to stay in power in order to benefit from resource wealth to enrich themselves illicitly. In turn, the resource curse makes Lebanon prone to more corruption and more social dissension; the resource curse, confessionalism and corruption nexus therefore acts as a vicious circle.

Weak governance

The permeation of confessionalism and corruption in Lebanese state institutions lead to the hindrance of the democratic process as institutions become weak and untrusted by the public. Moreover, Lebanese Ministers often hire technocratic political advisors to assist them in office; such advisors are not public officials and often have a sectarian affiliation, thus highly contributing to the increase of confessional influence over Lebanese institutions. Confessionalism also permeates the legislative body. In Lebanon, Members of Parliament undertake the role of an intermediary between their clientelist sectarian followers on one hand, and the state and its institutions on the other (Mouawad 2019). Sectarian leaders are represented in Parliament by family members and friends; the career of Members of Parliament thus depends on sectarian leaders, and not on the former's mandate as the citizens' representatives.

As was explained in the previous section, Parliament is bestowed with an oversight role that gives it the right to summon Ministers for questioning when the latter are not fulfilling their duties; such a questioning can lead to the withdrawal of confidence from said Ministers and from the Council of Ministers as a whole. However, since each Minister represents a specific confession, and thus safeguards the interests of said confession in the government, the questioning and withdrawal of confidence from a Minister can be seen by sect leaders and followers as an affront. The ability of the Council of Ministers and of the Members of Parliament to discipline a Minister is highly impeded by sectarian affiliation; if a Minister has a strong sectarian backing, his replacement will depend on the decision of sect leaders (International Law and Policy Institute 2013). Besides, any

replacement must be conditioned by confessional belonging in order to preserve the confessional equilibrium of the Council of Ministers. The implementation of the Parliament's oversight role is therefore seen as an endangerment to Lebanon's social cohesion, which rests on the coexistence and equity of its different confessional groups.

Social dissolution

Confessionalism thus allows communal coexistence, safeguards Lebanese pluralism and engenders democracy through intercommunal dialogue and participation (International Law and Policy Institute 2013). However, confessionalism also reinforces sectarian divisions; political leaders use confession to mobilize followers and maintain the clientelism of the latter through patronage, thus using public resources in order to secure their political power. Confessionalism grants sect leaders an important amount of political power, which greatly contributes to corruption; said sect leaders appoint clientelist officials in state institutions in order to preserve the sect and leader's interests. Such behavior greatly enlarges the gap between the different Lebanese confessional groups, and impedes on the establishment of national cohesion. Politics are deeply personalized and based on contracts between political figures and the confessional group they are attached to (Khodr and Uherova Hasbani 2013).

NGOs and media outlets in Lebanon are also constrained by confessional dynamics, which undermines their work and their potential for collective action (International Law and Policy Institute 2013). Lebanese media outlets are owned by sect leaders and political parties, which allows the personal enrichment of the latter, and thus hinder the independence and objectivity of information (Alsharabati and Chaer 2015). Such political influence on information sources clearly impacts the freedom and liberty of expression, and contributes to the constant decrease of Lebanese national unity.

Teetering economy

The Lebanese economy is in a vulnerable state: the country suffers from an enormous public debt, it depends on foreign remittances, and the government deficit is persistent (Fattouh and El-Katiri 2015). Moreover, the Lebanese economy is subject to the harsh impact of corruption; around 10%

of the country's GDP is estimated to be lost to embezzlement, tax evasion and illicit enrichment (Alsharabati and Chaer 2015).

The Lebanese public debt has been gradually increasing since 1993, following the issue of treasury bonds and eurobonds[28] by the government. The national public debt thus reached over USD 85 billion $ in January 2019, which is equivalent to 150% of the GDP (Hamza 2019). The current public debt is thus denominated in two currencies: the Lebanese pound (LBP)-denominated debt, and the dollar (USD)-denominated debt. The former is more manageable than the former, as the Lebanese Central Bank is able to print out more currency to repay it; the latter, however, is more complicated as dollars cannot be printed, and eurobonds can thus not be repaid. Lebanon's foreign currency debt is thus not being repaid due to the country's lack of reserves of dollars. In Lebanon, most of the treasury bonds and eurobonds are held by local banks; around 75% of all Lebanese bank deposits are invested in the national debt (Chaker 2019). The Lebanese government is unable to repay its public debt because of the high rates of return to investors, which exceeds 35% (Salti 2019). Such high return rates are directly due to the fact that the major shareholders of Lebanese banks are politically exposed persons, or are directly linked to politicians (Chaaban 2019). In fact, the elevated rates allowed politically exposed persons, who are also the creditors, to get very high returns on investment.

The high rates of return on investment in the banking sector discourages investors from investing their money in any other sector. The Lebanese economy is therefore a rentier one; the state received an income without increasing its economic and political productivity and development (Beblawi and Luciani 2015). Another source of income for the Lebanese economy was the tourism and services industry; however, such sectors crumbled after the beginning of the Arab spring revolutions and of the Syrian civil war, as foreigners were frightened to visit the country. Moreover, the COVID-19 pandemic travel restrictions and safety measures forced hotels,

[28] A eurobond is a debt instrument denominated in a currency that differs from the national currency of the indebted country. The name "eurobond" is misleading, as the Lebanese foreign currency-debt is in fact in USD and not in EUR. The appellation comes from the fact that most USD lying outside of the US were the Marshall Plan dollars lent to Europe.

restaurants, beaches, night clubs and bars to close; such businesses were a staple of the Lebanese economy.

The Lebanese job market has been saturated for the past decade. In 2019, unemployment rates reached 23,5% in the 20-24 age group; more than 35% of young graduates are unemployed (Hage Boutros 2019). Such saturation is amplifying the brain drain phenomenon, which consists in the emigration of a country's qualified workforce: 44% of Lebanese graduates leave the country to find a job in North America, Gulf countries, and Europe. Such a number is on the rise, as the number of Lebanese who left the country in 2019 and did not return increased by 42% compared to 2018 (Qantara 2020). Besides, the Lebanese job market is widely impacted by wire pulling and corruption; people acquainted with politically exposed persons secure jobs easily, whereas people applying in traditional and transparent ways encounter more difficulty with employment.

The incidence of corruption and confessionalism on the Lebanese energy sector

Similarly to the rest of Lebanese public institutions, the Lebanese Petroleum Administration was also constituted on a confessional basis. As was said earlier, the members of the LPA were appointed along sectarian lines, after months of debate between political factions, which put the Lebanese energy sector in a deadlock (Fattouh and El-Katiri 2015). Seats were given to a representative of each one of the six largest confessional groups in Lebanon (Wood 2013). As was said in the previous sections, the LPA is placed under the tutelage of the MoEW, which limits its independence. Ministries in Lebanon are attributed to different confessional groups in order to respect the sectarian equilibrium of the country. The independence of the LPA is also limited along sectarian lines, seeing as the MoEW is a Ministry allocated to Maronite Christians confessional groups (International Law and Policy Institute 2013). Such a configuration allows the overtake of sectarian interests over the good governance and management of the Lebanese energy sector.

The confessional system can thus put the energy sector on hold, as consensus is needed between all confessional groups in order to take decisions. However, such a system can sometimes have the opposite effect as it prompts the government to take decisions very quickly, thus putting a lot of pressure on administrative bodies, and reducing the overall quality of decisions taken (International Law and Policy Institute 2013).

The Lebanese hydrocarbon sector relies on the same control and oversight mechanisms as other public sectors. The weakness and lack of independence of such mechanisms greatly affect the transparency of the hydrocarbon sector, making the latter more prone to the permeation of corruption and less apt to fighting it (Khodr and Uherova Hasbani 2013). Moreover, the lack of oversight mechanisms prevents processes of accountability in the long run, as oversight bodies are not able to hold public officials accountable for their actions (International Law and Policy Institute 2013). The permeation of confessionalism in the Lebanese energy sector erodes public trust in the state, and also affects the reliability of the state in the eyes of foreign investors and companies (Fattouh and El-Katiri 2015). Such permeation can on the long term hinder the Lebanese energy sector's attractiveness.

Figure 10 Map representing the FSRUs to be built along the Lebanese coast (source: author)

In 2013, Lebanon closed bids for two LNG tenders; the first tender aimed for the installation of an LNG import terminal, and the second tender consisted in an LNG import contract. Candidates for a floating storage regasification unit (FSRU) were shortlisted to be presented to the Council of

Ministers; however, the process was stopped because of Lebanon's political deadlock (AUB Policy Institute 2018). A new tender was launched in May 2018 aiming to design and operate three FSRUs near the coastal cities of Beddawi, Salaata and Zahrani. The study was completed in August 2018 and was submitted to the Council of Ministers. The government's choice of constructing three FSRUs is directly linked to confessionalism; the chosen areas harbor Christian, Shia and Sunni majorities, which would be representative of the three most important confessional groups in Lebanon (Azhari 2019a; Nakhle 2020). However, experts underline that operating three FSRUs will be unnecessary as they will surely be underutilized, thus reducing their competitiveness (AUB Policy Institute 2018). Such a sectarian repartition is a sign of the allotment configuration of the Lebanese state; members of the ruling class divide resources, opportunities and privileges arising from the state between themselves and their respective confessional groups (Fattouh and El-Katiri 2015).

Another hindrance that the Lebanese energy sector faces is the opaqueness regarding the ownership of firms partaking in petroleum activities. Beneficial owners are the persons that ultimately own or control a company or an arrangement, even if the legal ownership of said company or arrangement belongs to someone else (Inter-American Development Bank and Organization for Economic Cooperation and Development 2019). Disclosing beneficial ownership alleviates revenue losses linked to fiscal evasion and corruption. Such a disclosure can also mitigate the effects of the resource curse, which manifest as weak governance and deficient development.

In 2015, fiscal evasion in Lebanon was estimated between $ 1,3 billion and 5 billion USD, which represents roughly around 2,5 to 10% of the Lebanese GDP (Mahmalat and Atallah 2018; The Daily Star 2018). Lebanon's taxation and collection system suffers from implementation problems, which could be mitigated by avoiding the collaboration of politicians or public servants and hydrocarbon firms (Lebanese Oil and Gas Initiative 2018). Corrupt relationships between firms and governments allow for corrupt practices, such as tax avoidance and tax evasion. Disclosure of beneficial ownership is all the more important seeing as politically exposed persons often hold stakes in companies; such duality creates a conflict of interest, which thus results in corrupt behaviour, and in the exploitation of authority and public function for personal interests (Lebanese Oil and Gas Initiative 2018).

The disclosure of beneficial ownership increases transparency, which in turn, enables accountability by oversight actors such as governmental bodies and civil society. It enables resource-rich countries to improve their governance of the hydrocarbon sector. In Lebanon, beneficial ownership was introduced in the law on tax procedures, which defines the concept and sanctions non-disclosure (Tohme 2019). Beneficial ownership in the context of petroleum activities is tackled in the first annex of the Prequalification decree; companies submitting applications to participate in Lebanese hydrocarbon activities must declare the identity of shareholders holding more than 20% of company shares and must provide an organizational chart of ownership (Republic of Lebanon 2013b). The disclosure of beneficial ownership is also embedded in the 2018 law aiming to strengthen transparency in the petroleum sector. However, such steps are not sufficient to prevent fiscal evasion and corruption and the process should be more detailed and embedded into a clearer text of law.

The OPRL provides that all the proceeds collected by the government from petroleum activities be placed in a sovereign wealth fund (SWF) (Republic of Lebanon 2010). Creating SWFs allows governments to place money in another account rather than directly into the state budget; they are extra-budgetary funds. Such funds can have different objectives, such as saving revenues to spend later, reserving for public investment, and ensuring state autonomy. SWFs are governed by fiscal rules that specify how much money should get deposited and withdrawn from the fund every year; such rules help the fund follow and meet its objectives, while allowing oversight, and thus accountability (Lebanese Oil and Gas Initiative 2018). However, SWFs often enable patronage and corruption, especially when they are created in countries lacking transparency and good governance. Establishing a sovereign wealth fund in Lebanon is therefore not suitable as the country lacks transparency and is institutionally weak; the SWF would hinder political development and would lead to more corrupt behaviour from public officials (Fattouh and El-Katiri 2015).

In November 2017, a draft law for the establishment of a SWF was submitted to the Lebanese Parliament. The draft was rushed through the legislative process, without any public consultation, thus rendering the process opaque. The fund would be divided into two accounts: a savings account which would receive revenue generated from royalties and production sharing, and a development account, which would receive revenue generated from petroleum activities taxes. After review by

experts, the draft law was found to contain loopholes and to lack investment rules and overall structure, thus making it weak and prone to the permeation of corruption (Lebanese Oil and Gas Initiative 2018). The viability of the SWF draft law can be questioned seeing the haste with which it was brought to Parliament. Besides, Lebanon will not be perceiving any petroleum revenue before a decade; fast tracking the SWF draft law thus creates unrealistic expectations which increases public spending and governmental rent-seeking (Nakhle 2020).

Another draft law that was taken to Parliament ahead of its time is the law surrounding the creation of a national oil company (NOC). Similarly to the case of the SWF, the OPRL also provided for the creation of a NOC. A NOC is a hydrocarbon company owned by a national government. States often wish to establish NOCs once hydrocarbon has been discovered on their territory, as it improves the state's governance and oversight on the sector (Lebanese Oil and Gas Initiative 2018). NOCs also lead to an increase in the state's shares of hydrocarbon revenue, as the latter is not split between the state and the hydrocarbon firm anymore.

The challenges of establishing a NOC come from inapt management. Weak governance and oversight lead to the exploitation of NOCs by government officials for personal interest. NOCs are often permeated by corruption in already corrupt countries, such as Lebanon. A draft law for the establishment of a NOC was submitted to the Lebanese Parliament in November 2017, at the same time as the SWF draft law. However, the OPRL provided that the creation of a NOC shall be preceded by the discovery of commercial hydrocarbon findings in Lebanon, which was not yet the case (Republic of Lebanon 2010).

The NOC and SWF draft laws have taken a fast track in Parliament; such a hasty review and implementation may lead to increased government spending and therefore have a negative effect on growth (Courson 2018). This can, in turn, make Lebanon more vulnerable to the resource curse, by subjecting it to the "presource" curse. In fact, Lebanon has yet to produce hydrocarbons; it thus cannot be subjected to the resource curse, which only affects petroleum-producing states. It can, however, fall prey to the "presource" curse, which is defined as the underperformance of economic growth following a commercial discovery of hydrocarbons, but preceding the production of said hydrocarbons (Courson 2018). However, Lebanon being still in the exploratory phase of petroleum activities, the country has yet to make a commercial discovery that is worth exploiting. As was

mentioned earlier, Lebanon is a corruption-stricken country; in order to stay in power, the political ruling class often makes false promises to the population, pledging for a better future. Politicians were therefore quick to talk about the potential benefits of Lebanon becoming a petroleum producer. In this context, Lebanon fell prey to the "pre-presource" curse: the Lebanese government increased its spending by borrowing money, which led to the inflation of the public debt and to the halt of development, long before the discovery of a commercially viable hydrocarbon field (Atallah 2018; Nakhle 2020).

The resource curse-corruption-confessionalism nexus can have a very serious impact on the nascent Lebanese petroleum sector. In fact, they form a vicious circle in which every element reinforces the other. Corruption and confessionalism make a country more prone to suffering from the resource curse. In turn, the resource curse makes a country more vulnerable to corruption, as the ruling class and government becomes less transparent to increase their personal profit, and to confessionalism, as sectarian loyalties are strengthened by the dissolution of national interest. In this regard, the Lebanese energy sector can be seen as an anti-democratic implement in Lebanon.

The energy and foreign dependence nexus

However, energy resources are also synonymous with dependence in Lebanon. The country has been dependent on external energy resources for the good functioning of its energy sector ever since the Lebanese civil war in 1975. Lebanon is totally dependent on oil imports; the latter made up 22% of total Lebanese imports in 2017, thus representing about USD 4,3 billion $ (Sia Partners 2019). 93% of Lebanon's energy supply is imported as oil, from countries such as France, Italy, Russia and Kuwait (AUB Policy Institute 2018; Fayad 2019).

The Lebanese energy sector was also dependent on natural gas imports from 2009 to 2011. Lebanon entered a 25-year long contract with Syria for the import of natural gas to the Lebanese Beddawi power plant (Ghoble 2018). Such imports were made through the Gasyle pipeline, connecting the south of Syria to the North of Lebanon. The contract was signed in 2003, however, it was not honored as the Syrian hydrocarbon production drastically decreased; Syria's natural gas production was not able to meet national energy demands, let alone export quotas (Fattouh and El-

Katiri 2015). Such a production insufficiency, combined with the beginning of the Syrian civil war in 2011, led to the cancellation of the contract.

Lebanon imported natural gas from Egypt through the Arab Gas Pipeline; however, such a supply was interrupted due to various factors (Darbouche, El-Katiri, and Fattouh 2012). In fact, payments were often delayed due to the Lebanese government's lack of punctuality. Moreover, the Arab Gas Pipeline was the target of repeated terrorist attacks on its infrastructure, which led to the disruption of supply (Ghoble 2018). Finally, Egypt's demographic boom and national demand for energy surge led to the country's cessation of hydrocarbon exports by 2011.

Lebanon was thus dependent on Syria and Egypt for natural gas imports. As was explained, such imports were halted early on, and Lebanon's dependency was not appeased. The government thus began importing oil instead of natural gas, in order to produce energy. However, Lebanese power plants were originally designed to run on natural gas, and not oil; while such a design is very common, the lack of options for regional imports of natural gas through pipelines meant that Lebanon had no choice but to run its plants on oil (Fattouh and El-Katiri 2016). Such a choice made the Lebanese power plants less efficient than they were supposed to be.

The Lebanese government intended on reverting back to gas imports through LNG by building FSRUs. However, such units are leased and owned by a shipping company, which reduces the participation of the host country, and increases the dependence on the latter on said company (AUB Policy Institute 2018).

Lebanon's energy dependence does not only surround its energy imports, but also its potential energy production and exports. In fact, Lebanon does not possess the adequate infrastructure to either assess, produce or export the undiscovered hydrocarbons that it potentially holds in its territory. The country is also dependent on future hydrocarbon markets for the export of its potential production.

Lebanese therefore is dependent on external actors to assess and produce hydrocarbons. Lebanon's hydrocarbon industry is relatively recent; the country thus lacks specialization in such a domain. The Lebanese government therefore had to call on foreign companies, such as Geco Prakla, Spectrum, and Petroleum GeoServices in order to realize 2D and 3D seismic surveys of Lebanon's

offshore area (Lebanese Petroleum Association 2020c). Besides, as was explained previously, Lebanon does not yet have a national oil company. While the lack of a public hydrocarbon firm minimizes the permeation of corruption in the production of oil and gas, it highly increases the dependence on foreign actors. Indeed, Lebanon totally depends on the operating consortium composed of Total, Eni and Novatek for the exploration and production phases of its hydrocarbon activities. The training of Lebanese personnel associated with petroleum activities also depends on the companies of the consortium, as they are responsible for providing training and know-how (International Law and Policy Institute 2013).

Lebanon's dependence to export its potential hydrocarbon production stems from the country's lack of hydrocarbon infrastructure. In fact, Lebanon does not have gas liquefaction units that would allow it to export LNG. Moreover, building such infrastructure is very expensive, and might not be viable if hydrocarbon discoveries are not important enough, as the price of infrastructure would be greater than the profit gained from exporting hydrocarbons (Fattouh and El-Katiri 2015; Weiss 2019). It is therefore highly likely that Lebanon will have to use the already existing infrastructure of neighboring states in order to export its potential hydrocarbons. Another potential scenario would be for Lebanon to run a joint-venture export facility in partnership with a neighboring state (Aboultaif 2017; Fattouh and El-Katiri 2016). However, both options imply a certain level of dependence towards foreign actors: on one hand, the dependence is total, as the infrastructure is totally owned and operated by another state, and on the other hand, the dependence is partial, as Lebanon would be implicated in operations alongside the other state.

Besides, Lebanon is also dependent on export markets for the commercialization of its hydrocarbons. In fact, the export and selling of hydrocarbon largely depends on the buying of foreign actors. By the time Lebanon discovers commercial fields, produces hydrocarbons, gets access to the adequate infrastructure, and exports its production, the market could already be saturated (Baconi 2017).

Energy resources could therefore be a source of democratic drawback in Lebanon. Such resources have the potential to exacerbate the already existing corrupt behaviour and confessional loyalties, which can disrupt Lebanon's fragile social cohesion, and further hamper the country's receding

development. Moreover, energy resources could be a source of foreign dependency, thus diminishing Lebanon's frail self-reliance and jeopardizing its security.

Section B- A factor of regional instability in the Eastern Mediterranean

Hydrocarbon discoveries in the Eastern Mediterranean, as well as potential findings, have heightened the tensions between coastal states. Such riches have also caught the attention of the great geopolitical power, which has contributed to the renewal of their interest in the region.

Energy resources are associated with a higher probability of territorial disputes and access conflicts; such conflicts are more likely to occur at sea, since borders are harder to define, and aggressions are harder to prove and punish (Klare 2009). While legislation regarding the delimitation of maritime spaces and the management of offshore resources exists under UNCLOS, it is not homogeneously implemented in the Eastern Mediterranean, as not all coastal states have ratified the law. UNCLOS principles for the equitable share of EEZs are therefore not applied in the region.

Maritime borders disputes

As was mentioned in previous chapters, unclear maritime border delimitations have led to numerous disputes between various states in the Eastern Mediterranean. Lebanon is involved in disputes with each of its neighbors, Syria and Israel; while the discord with Syria is dormant, given the two states' quasi-stable relations, the quarrel with Israel is more hostile. The Lebanese maritime border claim overlaps with Syria's in the north, creating an ambiguous zone of nearly 400 square kilometers, in which sovereignty is contested (Nour 2019).

In the south, Lebanon's maritime border claim overlaps with Israel's on an area of 850 square kilometers (Abdul Rahim, Godart, and Eid 2017). The maritime border conflict has resulted in threats by both the Lebanese and Israeli governments to use military force if one violates the maritime boundaries claimed by the other (Amsellem 2014; Vogler and Thompson 2015). In fact, Israeli Minister of National Infrastructures Uzi Landau warned that Israel would not hesitate to use force to protect its interests and defend its hydrocarbon fields (Ferziger and Wainer 2010). Such a threat

was immediately reciprocated by the Lebanese Minister of Energy and Water, who issued a statement claiming Israel would face consequences upon violation of UNCLOS (Mostafa 2016).

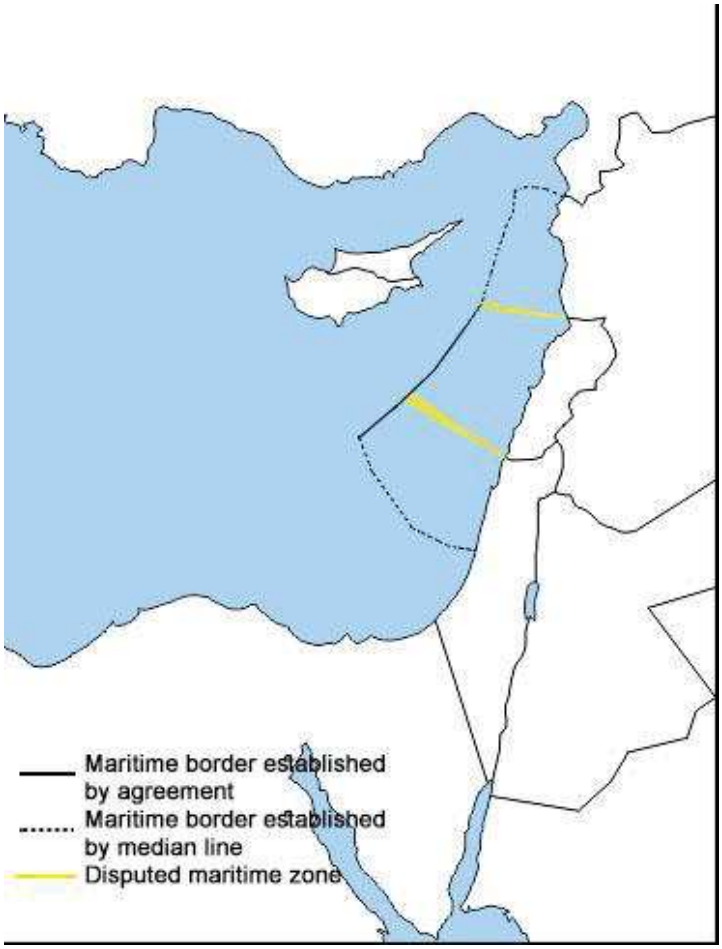


Figure 11 Maritime border disputes between Lebanon and its neighbors (source: author)

Negotiations were supposed to be conducted by American and Cypriot envoys to Lebanon and Israel. However, such talks were interrupted by Hezbollah, whose interventions in Syria's civil war are causing political turmoil with the United States and Israel (Weiss 2019). Moreover, Hezbollah has also threatened Israel with the use of force and has warned the Lebanese population against the Israeli government's unlawful extension of maritime sovereignty in Lebanese waters (Darbouche, El-Katiri, and Fattouh 2012). Negotiations resumed in 2018, with the visit of American Secretary of State Rex Tillerson and his assistant David Satterfield to Lebanon. The American diplomats reiterated their 2012 maritime border proposal, giving two third of the contested area to Lebanon, and a third to Israel; such a proposal was deemed as unacceptable by Head of Parliament

Nabih Berri. Hezbollah's Hassan Nasrallah called on Lebanese officials not to fall for such unjust mediation (Barrington and Francis 2018). The sect leader reignited tensions by warning Israel that their hydrocarbon infrastructure could very likely be targeted if necessary; such threats were backed by the Lebanese Supreme Defense Council, the governmental body responsible for national defense (Shama 2019c).

The hostile behaviour of both the Lebanese and Israeli government regarding the management of offshore resources is directly linked to their respective geopolitical goals. Lebanon is in the midst of a severe economic crisis; the government firmly believes that the revenue issued from the sale of potential hydrocarbon production could help the country repay its huge national debt (Shawish 2019). Lebanon thus claims full ownership of the contested area, as it represents the hope of a better future for the country. Israel, on the other hand, is concerned with its national security, which it deems at risk because of Iran's increasing involvement in the Middle East and the Eastern Mediterranean (Bornstein 2018; Musmar 2020). Besides, Israel has been working towards achieving energy security since the beginning of the 21st century; the Israeli energy sector is highly dependent on the hydrocarbons the government imports, and that it now produces, for its good functioning, hence the need to protect the Israeli offshore fields in the Eastern Mediterranean sea (Bahgat 2011).

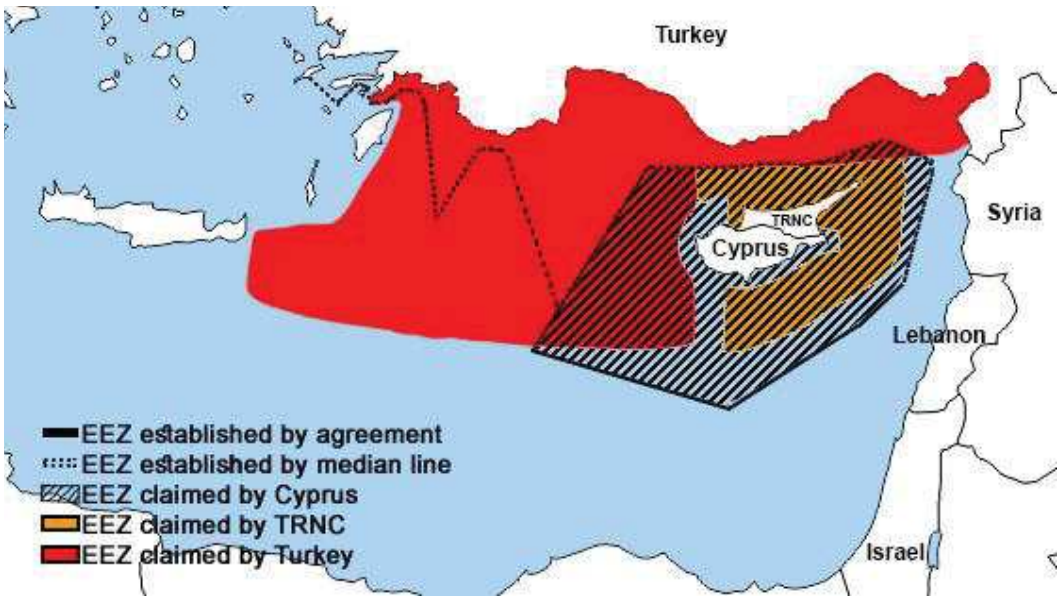


Figure 12 Map representing the EEZ claims of Cyprus, the TRNC and Turkey (source: author)

Turkey is also embroiled in numerous disputes pertaining to maritime border delimitations. Such discord stems from Turkey's geopolitical interests in the Mediterranean sea: Turkey has the longest shoreline in the Eastern Mediterranean and considers the sea to be vital for its internal security, as well as for its power projection plans in the Middle East (Shama 2019a). Turkey thus denies the right of coastal states, especially Cyprus, to an EEZ, as the latter would block its full access to the sea. In 1974, Turkey invaded the northern part of Cyprus, and created the Turkish Republic of Northern Cyprus; such political entity is only recognized by Turkey (Huet 2013). The Turkish government thus claims its rights to an EEZ through the TRNC, and calls for the cessation of petroleum activities in Cyprus' EEZ until the settlement of the maritime border dispute (Darbouche, El-Katiri, and Fattouh 2012). Such actions have led to the heightening of tensions between Turkey and Cyprus; at the same time, the Turkish government had committed numerous foreign policy blunders in the Middle East. In fact, in 2009, Turkey operated a geopolitical rapprochement to Arab states, and reiterated its continuous support for Hamas, which contributed to the degradation of its long-time alliance with Israel (Amsellem 2014). Turkish ties to Egypt were also highly hampered by Erdogan's blatant support for Egyptian ex-President Morsi, who had links to the Muslim Brotherhood, and his despising of Al-Sisi (Shama 2019b).

Turkey had thus successfully isolated itself in the region; the degradation of its relations with Cyprus and Israel pushed the two states closer together. This led to the creation of the Israeli-Cypriot-Greek axis, which were now tied by their hostility towards Turkey (Amsellem 2016). The emergence of such an alliance led to the political and economic marginalization of Turkey, who feels threatened since. The Turkish government thus took a series of measures to reinforce its presence in the Eastern Mediterranean Sea; Turkey sent warships to Cyprus' EEZ on various occasions in order to prevent Noble and Eni's ships from conducting seismic surveys and well drillings in the Cypriot EEZ (Darbouche, El-Katiri, and Fattouh 2012; Macaron 2018; Vogler and Thompson 2015). Turkish ships have illegally drilled wells in Cyprus' EEZ, which prompted the Cypriot and Greek governments to call for sanctions to be imposed in 2019 (Weiss 2019). In late 2019, Turkey signed a maritime deal with Libya, demarcating the two countries' maritime borders. The agreement also gave the Turkish government the right to conduct hydrocarbon activities in Libyan waters. The maritime deal creates a water corridor between Turkey and Libya, thus overlapping with Greek territorial waters along Crete, as well as Cypriot and Egyptian waters (see

Appendix 6). This agreement, considered as illegal by Greece, Cyprus and Egypt, as well as the European Union, would hinder the construction of the EastMed pipeline, which was scheduled to pass by the waters claimed by Libya (Shama 2019b; Tasci 2019). Such a strategic move will surely obstruct the EastMed pipeline project and serve as a legal basis for Turkish aggressive behaviour towards Israel, Cyprus and Greece in the Eastern Mediterranean (Cohen 2020).

Turkey aspires to become an energy hub linking the Middle Eastern and Eastern Mediterranean gas fields to European markets. Turkey benefits from a unique geographical position, linking Europe and the Middle East; this fact is at the core of the Turkish foreign policy, and is also important in the European Union's relations to Turkey (Wigen 2012). Turkey being a bridge between Europe and the Middle East also means that it is a link between hydrocarbon consumers and hydrocarbon producers. Turkey could become the energy corridor of the region by harboring regional hydrocarbon pipelines on its territory. Such a Turkish energy platform would render the country indispensable to both energy consumers and energy producers; energy consumers will depend on Turkey to access energy resources, while energy producers will depend on Turkey to monetize their production. Besides, such a strategy would allow Turkey to diversify its own energy sources, thus reducing its energy dependence on Russian energy imports (Shama 2019a).

Regional naval arms race

States located in the Eastern Mediterranean have witnessed an increase in their energy nationalism; the latter is defined as the assertion of control over energy resources located in a state's territory (Milina 2013). Energy resources are turned into geopolitical weapons, and energy geopolitics become a driver in the foreign policy of states. The discovery of offshore hydrocarbons, the maritime borders dispute, and the diverging geopolitical views of the diverse actors in the Eastern Mediterranean has led to an upheaval in the security environment of the countries. Such a change has provoked an unequalled naval arms race in the region.

Turkey is the strongest naval power in the Eastern Mediterranean; tensions related to hydrocarbon findings and maritime border disputes have highly contributed to the expansion of the Turkish naval capability (Rubin and Eiran 2019). Turkey is using its naval strength to assert its hard-power dominance over states in the Eastern Mediterranean (Shama 2019b). In 2018, Turkish vessels

stopped an exploration ship operated by Italy's Eni from conducting hydrocarbon activities in the Cypriot EEZ (Macaron 2018). In 2019, Turkish Foreign Minister Mevlut Cavusoglu declared that no action could be taken in the Eastern Mediterranean without the approval or participation of Turkey (Hurriyet Daily News 2019). The government then proceeded to launch its biggest naval exercise to date, titled *Blue Homeland*; the doctrine surrounding this exercise aims to achieve and consolidate Turkey's control of the three seas surrounding it, including the Mediterranean sea (Pinko 2020). Moreover, Turkey considers deploying its S-400 defense missile system along its southern coast, in order to protect its hydrocarbon exploration ships roaming the Eastern Mediterranean sea (Courcoulas 2019; Shama 2019b).

Israel is also increasing its naval power for two reasons: to strategically deter Iranian nuclear ambitions on one hand, and to protect its newly acquired hydrocarbon infrastructure and hydrocarbon fields on the other (Eiran and Malin 2013). In 2013, the Israeli navy was made responsible for the protection of Israeli gas fields and infrastructure, which led to the acquiring of nine submarines, to the purchase of four SAAR 6 corvettes from Germany, and to the development of unmanned vehicles such as the Seagull and Protector ships (Rubin and Eiran 2019). Israel has conducted numerous joint military exercises with Cyprus and Greece in the context of the Tel Aviv-Nicosia-Athens axis; the strategic chapter of Israel, Cyprus and Greece's cooperation consists in a military alliance. The Israeli and Cypriot governments signed common military agreements following the discovery of Aphrodite in 2011; such accords allow the Israeli army to fly over and navigate the Cypriot territory, as well as to land on Cypriot military bases, in exchange for Israeli naval protection of Cypriot hydrocarbon fields (Amsellem 2013; Huet 2013; Vogler and Thompson 2015). Additionally, Greece has allowed Israel's air force to train in Greek airspace; the two states have also been conducting joint naval defense exercises for the protection of offshore hydrocarbon infrastructures (Amsellem 2014; Tagliapietra 2013).

Egypt has recently increased its navy following the widening of the Suez Canal, and the discovery of its two large hydrocarbon fields, Zohr and Noor. Egypt boosted its military presence in the Eastern Mediterranean sea by purchasing two Mistral amphibious assault ships, a FREMM multipurpose frigate, four submarines, and four missile-launching corvettes from Germany, France and Italy (Rubin and Eiran 2019). Greece too, upgraded its navy by acquiring frigates, submarines, and helicopters, in order to catch up with Turkey's naval development (Kahraman 2019). The

Egyptian and Greek governments have also carried out several military drills in partnership with Cyprus. Such exercises represent a threat to Turkey as it is in bad terms with all three participating countries; moreover, one of the drills took place only 20 kilometers from the coast of Turkey, thus representing an affront to the Turkish government (Shama 2019c).

The involvement of great powers in the Eastern Mediterranean

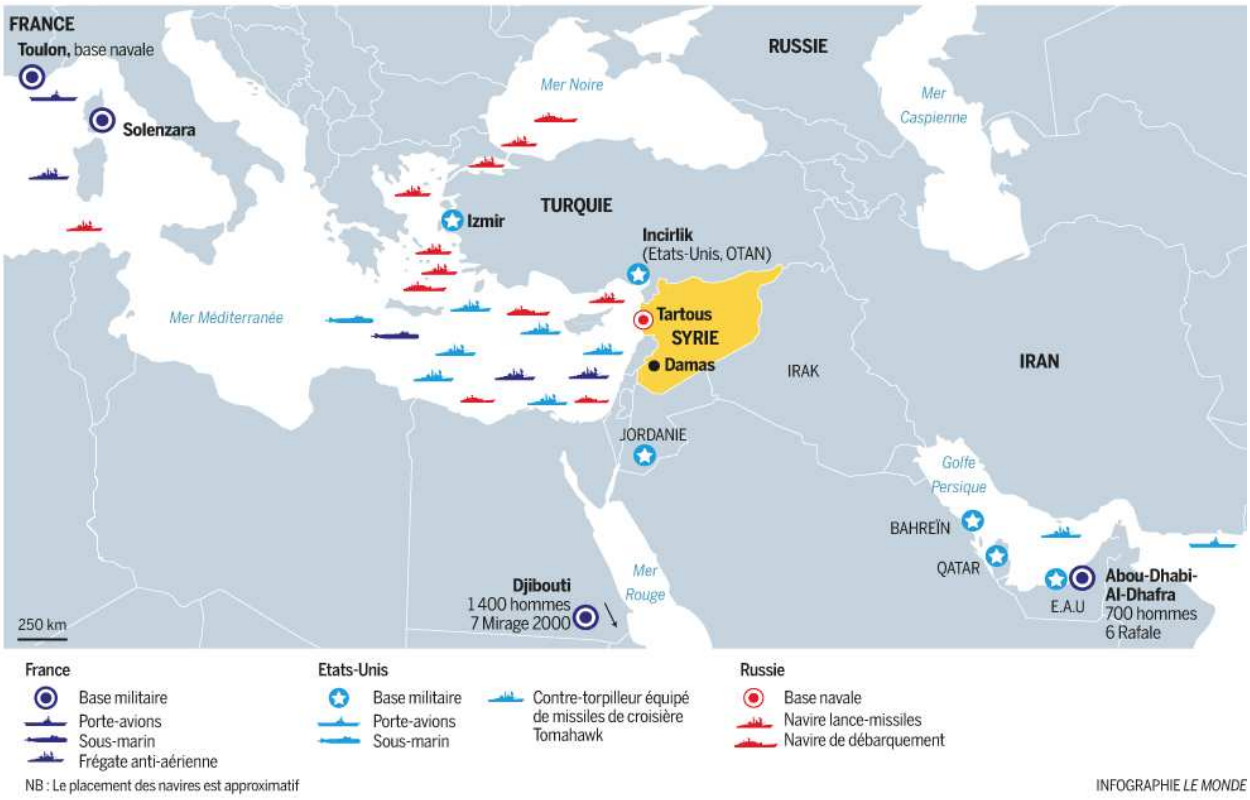


Figure 13 Map representing the naval presence of France, the United States and Russia in the Eastern Mediterranean (source: Le Monde 2017)

The undemarcated maritime borders, overlapping maritime claims and contested sovereignty areas have thus sustained a climate of tension between regional actors that heighten the risk of maritime accidents; minor incidents at sea could therefore be perceived as provocation and thus rapidly escalate (Shama 2019c; Zhukov 2013). Such tensions have been intensified by the involvement of great powers in such regional disputes.

In fact, the European Union and the United States were very supportive of Cyprus in the dispute opposing the latter to Turkey. The European Union instilled sanctions over Turkey: financial

assistance to the Turkish government was reduced by € 145,8 million EUR for 2020, and loans issued to Turkey by the European Investment Bank were put under review (Tidey 2019). The United States' Secretary of State Pompeo also showed his support to Cyprus by meeting with the Cypriot Minister of Foreign Affairs three times over the span of three months in late 2019. Pompeo also issued threats against Turkey, claiming that no country could take Europe[29] hostage (Brunnstrom and Maltezou 2019). In June 2019, the United States' Congress passed the Eastern Mediterranean Security and Energy Partnership Act. Such an act intends to upgrade the American foreign policy in the Eastern Mediterranean, and to work with key American partners in the region such as Israel, Cyprus and Greece ((Kırıkçıoğlu 2019). Such a stance by the European Union and the United States is offensive to Turkey as the latter is in the midst of hostilities and tensions with Cyprus and Greece, and currently suffers from damaged relations with Israel. Turkey claims that the European Union's and the United States' support for the Israeli-Cypriot-Greek alliance, and its disregard for the TRNC's rights, contribute to the heightening of tensions and political instability of the Eastern Mediterranean region (Güney 2019).

a. Russia

Moreover, geopolitical powers have been increasingly projecting their own maritime power in the Eastern Mediterranean region. Russia, for example, has many declared goals in the Eastern Mediterranean: it wants to transform the region in a zone of political and military stability, and to ensure a permanent and sufficient naval presence in the region (The Russian Federation 2015). Russia also wants to expand cruise passage from Crimea and Krasnodar, passing through the Black Sea, the Bosphorus and Dardanelles straights, to the Mediterranean Sea. Moreover, Russia held many naval exercises in the Mediterranean: it organized a large exercise in August 2018, which deployed more than 25 vessels, and held a ten-day long joint exercise with the Chinese naval forces in May 2015 (Guo 2015; Wyland 2018). Russia has also reinstated its fifth operational squadron, deployed naval platforms and expanded its naval facility in Tartus, Syria, in the context of the Syrian civil war (Rubin and Eiran 2019). Russia is thus cultivating its alliances in the Eastern Mediterranean region by deepening its involvement in Syria, but also by issuing a rapprochement with Cyprus.

[29] The Republic of Cyprus is a member state of the European Union; a threat against it is seen as a threat against the European Union as a whole.

In 2015, Russia and Cyprus signed an agreement allowing Russian ships and vessels to access Cypriot portuary facilities; besides, Cyprus receives the largest part of Russian foreign direct investments since 2010 (Grove 2015; Tagliapietra 2013). Such aims and actions underline Russia's hegemonic tendencies in the Eastern Mediterranean region. Russia has also been involved in the energy field of the Eastern Mediterranean. Russian hydrocarbon firms, such as Novatek and Soyuzneftgaz are involved in the petroleum activities of Lebanon and Syria, thus giving Russia a first-person view of recent gas developments in the Eastern Mediterranean. Moreover, Russia has constructed the TurkStream pipeline in partnership with Turkey, which was inaugurated in January 2020. Such a pipeline reinforces Russia's presence in the Eastern Mediterranean by ensuring that its gas remains at the most competitive prices for access to European markets through Turkey. However, while TurkStream broadens the area of action of the potential Turkish energy hub, it also hinders the latter. In fact, by transiting Russian natural gas, TurkStream does not comply with European laws on monopoly, which hinders its access to European markets. TurkStream therefore counters Turkish efforts to establish itself as an energy hub in the Eastern Mediterranean, thus reinforcing the need for Russian gas supply to Europe. Moreover, the pipeline impedes on Turkish goals of reducing Turkey's own dependency on Russian hydrocarbons.

b. The United States

The entry of Russia in the Eastern Mediterranean was heavily facilitated by the United States' gradual military retreat from the Middle East, following former US President Obama's doctrine. Besides, said retreat is not total, and the United States' navy participated in a cruise missile assault with a submarine in Syria, following Syrian President Bashar al-Assad's use of chemical weapons in April 2018 (Copp 2018; Rubin and Eiran 2019). The United States' then proceeded to deploy the Truman Carrier Strike Group, an aircraft carrier, in the Mediterranean Sea. Similarly to Russia, the United States' has numerous goals to achieve in the Eastern Mediterranean. The two main goals revolve around Syria and Turkey. First, the United States' hope to resolve the Syrian civil war, which will in turn stop Iran's power expansion in the region, and reduce the likelihood of an Israeli-Iranian conflict in Syria (Alterman et al. 2018). By getting involved in the Syrian conflict, the United States' also hopes to contain Russia's power projection plans through the Syrian territory in the Eastern Mediterranean. The second American goal in the Eastern Mediterranean is to manage the growing divergences between the United States' and Turkey: the United States

wants to reorient the Turkish government's foreign policy towards the West, and to rebuild their former military ties, as the American government heavily relied on Turkish bases in the past (Alterman et al. 2018). As was mentioned earlier, the United States' Congress passed the Eastern Mediterranean Security and Energy Partnership Act in June 2019. Such an act clearly underlines the American goal of containing Turkey's military expansion in the region. The act lifts the arms sale prohibition to Cyprus, gives a US 3 billion $ military aid to Cyprus, and halts the sale of F-35 aircrafts to Turkey, if the latter proceeds with the purchase of the S-400 air defense system from Russia (Hellenic Leaders 2019). Moreover, the act aims to improve energy cooperation between the United States and the Eastern Mediterranean countries, namely Israel, Cyprus and Greece, by establishing a "United States-Eastern Mediterranean Energy Center". The United States' government has been rather active in mediation talks linked to energy disputes in the Eastern Mediterranean, especially in the context of the Israeli-Lebanese maritime dispute. While such talks have not led to the resolve of said dispute, they have given the United States' the role of mediator in the region. Besides, the American hydrocarbon firm Noble has been involved in petroleum activities in Israel and Cyprus ever since the 2010s; this involvement has not helped improve the energy cooperation between the United States and Eastern Mediterranean countries, as Noble is a private, and not public firm. In July 2020, the American oil major Chevron announced the acquisition of Noble Energy. Such an acquisition will allow Chevron to enter the Eastern Mediterranean hydrocarbon landscape through activities in Israel and Cyprus. Chevron had prequalified as a potential operator in Lebanese hydrocarbon activities back in 2013; however, the acquisition of Noble are likely to change such a prequalification, as the Lebanese government will not accept the involvement of a hydrocarbon firm participating in activities in Israel (Zahr 2020).

c. The European Union

The European Union was the first great geopolitical actor to get involved in the Eastern Mediterranean region, in the context of the European Neighborhood Policy. Such a policy planned a light integration of regions surrounding the European Union by promoting European rules and values in exchange for technical and financial assistance. The European Union's interest in the Eastern Mediterranean is highly focused on the energy dimension of the region. Natural gas holds an important place in the European Union's energy strategy, as it is considered as a fuel aiding the transition to renewable energy (European Commission 2016). The main natural gas source of the

European Union is Russia, seconded by Norway; the latter however, is facing declines in production as its fields have reached their maximal production capacity. Such a decline means that the European Union will be increasingly dependent on Russia for gas supply in the future; such a dependence has heightened the European Union's energy insecurity as it will be vulnerable to supply disruptions caused by geopolitical conflicts with Russia (Stergiou 2019). The prospect of an Eastern Mediterranean gas hub is therefore very attractive for the European Union, as it will allow the latter to diversify its energy sources. The European Union has therefore installed a Euro-Mediterranean energy cooperation through the Union for the Mediterranean (UfM); the UfM is a transgovernmental organization aiming for the convergence towards european values, while promoting the integration of European and Mediterranean energy markets. Following the Arab spring revolutions of 2010, the UfM has also tried to implement renewable energy projects throughout Mediterranean countries, in order to facilitate a switch to clean energy; such a project failed in 2013 due to a lack of implication of European countries (Prontera 2019). The European Union thus switched to bilateral energy partnerships with Eastern Mediterranean countries. The most important one is its partnership with Egypt; both actors signed a Memorandum of Understanding on strategic energy partnership for the 2018-2022 period in 2018. Such a memorandum offers technical and financial assistance for the reform of the Egyptian energy sector, and clearly supports the creation of a gas hub in Egypt. Moreover, numerous European hydrocarbon firms have been involved in the petroleum activities conducted in Eastern Mediterranean countries, such as France's Total and Italy's Eni. Besides, European states have been cultivating their alliances with Eastern Mediterranean countries by selling them naval armaments to increase their naval capacity, thus allowing them to protect their hydrocarbon fields and infrastructures. The European financial support to the creation of a gas hub in Egypt, and military support to Eastern European countries is inscribed in a policy of containment of Turkey and Russia. The creation of a gas hub in Egypt using Egyptian LNG export facilities would undermine Turkey's potential role as a hydrocarbon hub using regional pipelines. Moreover, relying on Egypt for the export of hydrocarbons would put a halt to Russian monopoly on European energy markets.

d. China

China has been growingly involved in the Eastern Mediterranean since the beginning of the past decade. The region is important to China in the context of its Belt Road Initiative. In fact, the Eastern Mediterranean connects two regions that are important to Chinese interests; on one hand, Europe, which is the target market of Chinese manufacturing, and on the other, the Middle East, which harbors oil producing countries as well as Chinese allies (Putten 2016). China has been heavily investing in the transportation, energy and defense fields of the region; from 2012 to 2017, energy investments in Egypt, Greece and Jordan reached nearly US 20 billion $, while transportation investments in Egypt, Greece and Israel reached US 11,3 billion $ (Toolan, Bird, and Hoshovsky 2020). The Belt and Road Initiative has a land and a maritime dimension (see Appendix 7); China has therefore invested in land infrastructure, such as railroads, mainly in Eastern Europe, in order to facilitate merchandise transportation to European markets. The biggest part of Chinese investment has gone to maritime infrastructure. The Chinese Ocean Shipping Company (COSCO) has been operating two piers at the Piraeus port in Greece since 2009, which has led to a 600% increase in portuary traffic from 2009 to 2018 (Selcuk and Kahraman 2019; Toolan, Bird, and Hoshovsky 2020). In 2021, China will also be operating the Israeli port of Haifa for a period of 25 years; such an agreement has led the United States' government to warn Israel about security concerns, stemming from China's involvement on its territory (Ben-Gedalyahu 2020). Although China's involvement in the Eastern Mediterranean has been primarily economic, it has also military motivations. As was mentioned previously, China and Russia conducted joint naval military exercises in the Mediterranean Sea in 2015. Such exercises increased the concerns of the European Union and the United States; however, China has also conducted naval drills with NATO in the same time frame. A couple of years earlier, in 2011, the Chinese navy rescued 30,000 Chinese nationals from Libya, in cooperation with the Greek navy; such an operation further reinforced the ties between the two countries (Tzogopoulos 2017). Therefore, it seems that China is adopting a policy of non-alignment towards the great powers operating in the Eastern Mediterranean.

As was demonstrated, the discovery of hydrocarbon fields, the division of EEZs amongst countries and the geopolitical challenges resulting from such actions have renewed the interest of regional actors and great geopolitical powers in the Eastern Mediterranean. Until now, maritime issues in

the region, such as the demarcation of maritime borders, the securitization of offshore hydrocarbon fields, infrastructure and export routes have mostly been answered by unilateral actions (Rubin and Eiran 2019). However, such security issues would be better tackled by collective action. In fact, the Eastern Mediterranean qualifies as a regional security complex. The latter is defined as a group of states that are continually affected by security issues emanating from a specific geographic area; such states are interconnected and any action taken by any state, or any development happening inside a state, can have a major impact on the rest of all the complex (Lake and Morgan 2010). In this case, the factor that binds the Eastern Mediterranean states together as a regional security complex is the energy-related security dynamic (Stivachtis 2019).

Although the Eastern Mediterranean can be considered as a regional security complex, it cannot be considered as a region, such as the following definition implies: a group of states being geographically close and interconnected through culture, ideas and values (Paul 2012). In fact, states in the Eastern Mediterranean do not display a common set of ideas and values, and do not share the same culture, unlike other regions such as the European Union. Such differences and dissimilarities can explain why the Eastern Mediterranean has failed to organize itself as a region and to further cooperate on security issues affecting all states (Rubin and Eiran 2019).

In July 2019, the East Mediterranean Gas Forum was held between energy ministers from Israel, Cyprus, Greece, the Palestinian Authority, Jordan, Egypt and Italy. The former American Energy Secretary Rick Perry and the former Commissioner of Energy of the European Union Miguel Arias Cañete were also present (Stevenson 2019). Such a forum aims to create a regional gas market in order to ensure security of supply and demand in the region; the forum also aims to lower infrastructure cost for regional hydrocarbon projects (Ismail and Ismail 2020; Weiss 2019). Another meeting was held in January 2020; during the conference, the attending energy ministers approved the shift of the forum to a regional organization (Israeli Ministry of Energy 2020). Following such a decision, France asked to join the organization as a member, while the United States asked to become an official observer (Amlôt 2020). The interest given by external states to such a regional organization denotes its geopolitical importance. Yet, three key regional states are missing from the Forum: Turkey, Syria and Lebanon. Turkey, on one hand, is still undertaking illegal drillings in Cyprus' EEZ despite the European Union's warnings, and was thus not invited to participate in the forum. Such a blatant disregard towards Turkey makes the Eastern Mediterranean Gas Forum

seem like an anti-Turkey axis, which could, in the long term, drive to a heightening of regional tensions (Shama 2019c). Syria was not invited either, as the country is still subject to many international sanctions resulting from el-Assad's government's hostile behavior towards the Syrian population. Another reason as to why Syria was not invited could be its close ties to Russia; Syria's participation in the Eastern Mediterranean Gas Forum could therefore be counterproductive to regional states', as well as the European Union's and the United States' effort to diversify natural gas sources away from Russia. Lebanon, on the other hand, is in a diplomatic rupture with Israel, which prevents it from joining the Eastern Mediterranean Gas Forum, which is an Israeli initiative. However, Lebanon's attendance could be highly beneficial for its nascent hydrocarbon sector, thus allowing the state to inscribe itself in the regional energy landscape by forming alliances with fellow producing countries and by joining already existing export schemes.

CHAPTER III: ENERGY RESOURCES: A TOOL OF SUSTAINABLE DEVELOPMENT

Section A- A driver towards progress in Lebanon

In the previous chapter, the negative impact stemming from energy resources on the governance of a country was analyzed. It was concluded that the exploitation of energy resources in a country suffering from corruption, weak institutions and social disunity led to the phenomenon of the resource curse. The resource curse then locked the country in a vicious circle of corrupt behavior at the expanse of the population, poor governance, and civil tensions.

However, the potentiality of energy resources in Lebanon has also had positive outcomes. In fact, potential energy discoveries were a driver towards better governance, sustainable development and energy diplomacy in Lebanon.

Hydrocarbon resources are tantamount to hope in Lebanon since they are likely to represent a cash inflow if the quantities are deemed enough for it to be exported. Cash inflow would consequently translate in the amelioration of national infrastructure, in the creation of a sovereign wealth fund that could profit future generations, or in the reimbursement of the Lebanese national debt. The latter is massive as it amounted to 140% of the Lebanese GDP in 2019 (Banque du Liban 2019; International Monetary Fund 2019).

Potential discoveries are a driver to better governance

The geological survey conducted by the United States in 2010, and the early hydrocarbon discoveries made by the occupied Palestinian territories, Israel and Cyprus drove the Lebanese government to conduct its own petroleum activities in its offshore area. In order to do so, Lebanon first worked towards the demarcation of its maritime borders with its neighbors in accordance with the principles of UNCLOS. Lebanon had signed an agreement with Cyprus in 2007 in order to delimit the countries' maritime borders; however, such a deal was flawed as it did not represent Lebanese interests and was never ratified by the Lebanese Parliament (Darbouche, El-Katiri, and Fattouh 2012). Lebanon thus took steps in accordance with good conduct in order to edit such an

agreement with Cyprus; the Cypriot government refused, having signed another agreement to demarcate its own border with Israel. The delimitations issued by Cyprus and Israel deprived Lebanon of 850 square kilometers of maritime territory (Aboultaif 2017). The Lebanese government thus sent its unilateral delimitations of its maritime borders to the United Nations in July 2010; such an action is in accordance with international law as the Vienna Convention on the Law of Treaties provides that an agreement signed between two states does not create obligations for a third state, without the consent of the latter (United Nations 1969).

The Lebanese government has ratified various international laws aiming to fight corruption, and thus, to better national governance. Lebanon ratified the UNCAC in 2009, and displayed genuine efforts towards compliance to said convention. The UNCAC is the only anti-corruption international treaty that is legally binding to ratifying states; parties to the convention have to cooperate with others in order to fight corruption and corrupt practices on a transnational level. In order to comply with principles of the UNCAC, Lebanon has criminalized most corrupt practices in its criminal code, such as bribery, trading-in of influence, embezzlement, abuse of functions, money laundering, concealment, and participation or attempt to participate in corrupt behavior. The criminal sanctions relating to corrupt practices are deemed as dissuasive enough by the United Nations Office on Drugs and Crime (UNODC) (United Nations Office on Drugs and Crime 2015). In a report reviewing the implementation of the UNCAC treaty in Lebanon, the UNODC called for the criminalization of other corrupt practices such as the bribery of foreign officials and illicit enrichment, for the protection of corruption whistleblowers, and for the lifting of banking secrecy when necessary (United Nations Office on Drugs and Crime 2015). In accordance of articles 32 and 33 of the UNCAC, relating to the protection of witnesses, experts, victims, and reporting persons, the Lebanese Parliament approved the Law on Whistleblower Protection in 2018; such a statute allows for the protection of persons disclosing corrupt practices to the authorities (Sadek 2019; United Nations 2004). Moreover, in the wake of the October 2019 revolutions in Lebanon, the Lebanese Parliament passed a law in late May 2020 for the lifting of banking secrecy for public officials (AFP 2020, 2020). Lebanon suffers from a lack of enforcement of the rule of law; promulgated laws are therefore not as widely enforced as they should be (World Bank 2020). Saying that the promulgation of anti-corruption laws will drive the country into corruption-free

governance is wrong; however, the passing of such laws in a corruption-ridden country such as Lebanon is a step forward in the establishment of good and transparent governance.

The institutional and legal framework encompassing the Lebanese petroleum sector is deemed as in line with international standards and good practices by international and national experts. The structure of the sector integrates necessary elements, adjusted to fit the Lebanese social and political context (International Law and Policy Institute 2013). In fact, the regulator of the petroleum sector, the Lebanese Petroleum Administration, is confessionally designed and is subject to the political control of the Council of Ministers, which is also based on confessionalism. While such an approach might increase confessional loyalties, as was seen in the previous chapter, it can allow the Lebanese petroleum sector to continue working in times of political deadlock, which happens often in the country. As for the legal petroleum framework, it also fits international best practices and the Lebanese context. Lebanon opted for a concise and brief framework, the OPRL of 2010, which is often supplemented by ministerial decrees aiming to give precisions to certain provisions. Such a system allows for the nascent Lebanese petroleum sector to evolve with time and thus enhance itself. The OPRL, the PAR, the Tender Protocol and the EPAs form a coherent legal framework allowing the good carrying out of petroleum activities in Lebanon (Lebanese Oil and Gas Initiative 2018).

Many steps were taken for the enhancement of transparency throughout the establishment of the Lebanese petroleum sector. Lebanon opted for competitive bidding in order to maximize fair competition, openness and equality between participating companies (Lebanese Oil and Gas Initiative 2018). Transparency towards involved petroleum firms will instill the interest of potential future investors in the Lebanese petroleum sector.

Besides, the Lebanese Parliament voted two laws in order to strengthen governmental transparency. In 2017, the Law on Access to Information was passed; such legislation allows the request of administrative documents from any public office in Lebanon. Said law also calls for the creation of an anti-corruption commission; such a commission would be tasked with the investigation of corruption claims in the public sector, and would oversee the good implementation of anti-corruption laws. The National Anti-Corruption Commission was created in April 2020, three years after the adoption of the Law on Access to Information. The Commission’s members

must have no political affiliation and no history of involvement with a political party, in the aim of protecting its neutrality. However, commissioners are nominated, and not elected, which hinders the democratic process; resorting to an election would have enhanced the transparency of the formation of the Commission (Chehayeb 2020). While the formation of the commission is a step forward towards accountability and towards the sanction of corrupt behavior in Lebanese public officials, the nomination of commissioners impedes on the core principle of the National Anti-Corruption Commission, thus stripping it from its essence. Moreover, the Law on Access to Information suffers itself from a lack of national implementation. In the context of a study on the transparency of the public administration in Lebanon, the group Gherbal Initiative asked 140 public institutions for documents, under the Law on Access to Information. Such institutions were in the obligation to provide requested documents; however, it was revealed that only 33 institutions out of 140 gave access to the demanded files (Gherbal Initiative 2019). While this represents progress, compared to the past total unavailability of public documents, the Lebanese public administration still has a long way to go to reach the full implementation of the laws passed by Parliament.

In 2018, the Lebanese Parliament passed the Law on Enhancing Transparency in the Petroleum Sector; as its name indicates, such a law aims to impose transparency in the petroleum sector through the whole value chain. The law called for the immediate publication of any documents relating to the petroleum sector, such as legislation and decrees. In this context, the Lebanese Petroleum Administration often publishes all laws and decrees relating to the sector on its official website; the public was thus also given access to the Prequalification decrees, to the Model EPA, to the Tender Protocol, to cite a few. The Law on Enhancing Transparency in the Petroleum Sector also calls for the disclosure of beneficial owners of rights holders, which are the foreign petroleum firms operating in Lebanon; the law also calls for the disclosure of beneficial owners of all the subcontracted companies. This step is deemed as quite progressive by experts, as subcontracted companies in the context of petroleum activities represent more than 50% of the costs involved in the sector (Azhari 2019e). Another progressive action taken by the Lebanese government was the publication of the Exploration and Production Agreements that it signed with the working consortium composed of Total, Eni and Novatek (Republic of Lebanon et al. 2018b, 2018a). EPAs are signed between a government and hydrocarbon firms to seal the contract surrounding

petroleum activities, and to detail the latter. EPAs very often remain confidential as the agreements may contain sensitive material qualified as business secrets. By publishing the EPAs relating to its petroleum activities, Lebanon has taken a significant step towards the transparency and openness of its petroleum sector.

In order to continue its efforts of better governance and transparency, the Lebanese government has been collaborating with the Lebanese civil society in the context of the petroleum sector. The latter benefits from the implication of a fair number of organizations working towards the transparency of the Lebanese petroleum sector, such as the Lebanese Oil and Gas Initiative, and the Lebanese Transparency Association, to cite a couple. The Lebanese Oil and Gas Initiative (LOGI) is a non-governmental organization aiming to raise awareness about the detriments of hydrocarbon mismanagement; it is composed by numerous oil and gas experts and regularly publishes reports and recommendations to inform citizens and policymakers on the energy sector. The Lebanese Transparency Association (LTA) is the national chapter of Transparency International; the association fights against corruption in the Lebanese energy sector, and in the Lebanese political life in general.

Experts have been vocal about the gap existing between research and policy-making in the Lebanese energy sector. The research on energy policy in Lebanon is slowed down by the sectarian political context, by the lack of policy continuity between consecutive governments but also by the implementation challenges and delays caused by the Lebanese government (Khodr and Uherova Hasbani 2013). Moreover, policy-makers argue that energy research is too theoretical and technical, and that it is not applicable in the Lebanese context. The fracture between academia and policy-making is due to a lack of institutionalization, of places for interaction, and of systematic political processes (El-Amine 2019). Bridging such a gap will allow Lebanese policy-makers to make political decisions that are enlightened by the expertise of researchers, especially in the nascent sector of energy. Although civil society actors and petroleum experts salute the ongoing efforts of the Lebanese government to increase transparency and good governance in the energy sector, they urge it to follow the given recommendations, consisting of adopting a national strategy for the petroleum sector and managing public expectations. The Lebanese Oil and Gas initiative and the Lebanese Transparency Association have joined forces with seven other NGOs and created the

Lebanese Coalition for Good Governance in the Extractive Industries in order to effectively advocate for better governance and monitoring of the energy sector in Lebanon.

The Lebanese government has expressed its interest in joining the Extractive Industries Transparency Initiative in 2017, in the aim of increasing governmental transparency in the petroleum industry. The EITI is the result of the cooperation between governments, petroleum companies and civil society; this multi-stakeholder cooperation was established in order to enhance standards for revenue transparency in the natural resources sectors. In order to join the EITI, governments have to demonstrate clear efforts towards the enhancement of transparency in their extractive industry; states must disclose frameworks, regulations and contracts in order to enable citizens and participating petroleum firms to understand the sector (Lebanese Oil and Gas Initiative 2017b). Participating countries also have to form a multi-stakeholder group (MSG), composed of the government, of companies operating on the country's territory, and of civil society actors, in order to map out how the country can seek compliance with EITI standards (Lebanon Gas and Oil News 2019). Lebanon therefore has to form its own MSG to fulfill its application to the EITI; the MSG will be formed through elections, supervised by the NGO Publish What You Pay and the Natural Resources Governance Institute.

Lebanon has thus opted for an ambitious model of petroleum governance, which is an indicator of the country's desire for sustainable management within the sector, despite the hindrances linked to the Lebanese political and confessional context (International Law and Policy Institute 2013). Sustainability, coupled with transparency, accountability, and a clear assignment of roles and responsibilities, can lead Lebanon to successful governance in the petroleum sector, and in the entire public sphere in the long term (Marcel 2013). Lebanon has also taken steps towards the enhancement of the transparency and accountability of its petroleum sector through the adoption of adequate legislation and through its participation in dedicated international cooperation bodies.

Potential discoveries instilled governmental interest sustainable development

The presence of maritime hydrocarbon reserves in Lebanon holds importance since the country suffers from power shortages. In 2019, Lebanon had a national electricity demand of 3 400 MW; Electricité du Liban (EdL), the national electricity company, offered a supply of 1 530 MW, thus

covering less than 50% of the national demand (Government of Lebanon and United Nations 2019; Moore and Collins 2020; Sia Partners 2019). Theoretically, the maximum capacity of all installed power plants in Lebanon is of 2 720 MW; yet, plants often require closing for maintenance as they are aging. Practically, EdL has a generation capacity of 2 100 MW at peak supply, which would amount to 60% of the national demand. However, EdL does not function at full efficiency as it suffers from poor governance and crippling operating losses. The electricity losses amount to nearly 40% of production: 15% due to technical losses, 20% due to non-technical losses and 5% due to uncollected electricity bills (Ministry of Energy and Water 2019). With financial losses amounting to 1.4 billion USD in 2017, EdL has become a burden for the state budget, as governmental transfers to the company have been amounting to 20% of state expenditure every year since 2009 (Government of Lebanon and United Nations 2019; Khodr and Uherova Hasbani 2013; Moore and Collins 2020).

The gap between energy demand and energy supply is filled by independent power producers (IPPs). IPPs are individuals that possess personal back-up power generators, and that operate outside of any legal framework (Khodr and Uherova Hasbani 2013). Residents of Lebanon are therefore obligated to pay two different electricity bills: one for EdL, and another one for IPPs, in order to ensure a continuous access to electricity (Moore and Collins 2020). IPPs' electricity bills are an economic strain on the residents of Lebanon, as the privately generated power is more expensive than the state-generated power.

The potential hydrocarbon resources offshore Lebanon are all the more important as Lebanese power plants were originally planned to function on natural gas (Sia Partners 2019). Natural gas had a central place in the Lebanese energy mix in the early 2000s, though importing it proved to be non-viable for the country. Lebanon signed a 25-year long contract with Syria in 2003, according to which the Lebanese Beddawi power plant would receive Syrian natural gas through the Gasyle pipeline (Ghoble 2018). However, the contract was discontinued due to Syria's inability to meet its own national natural gas demand; a situation that was exacerbated by the start of the Syrian civil war in 2011 (Fattouh and El-Katiri 2015; Ghoble 2018). In 2009, Lebanon started importing natural gas from Egypt through the Arab Gas Pipeline to purvey the Beddawi power plant. Delays in payment from the Lebanese government and supply disruptions due to terrorist attacks on the pipeline thus prompted Egypt to interrupt its exports to Lebanon (Fattouh and El-Katiri 2016). The

Lebanese government does not presently import any natural gas; offshore hydrocarbon fields would therefore contribute in enhancing the Lebanese power plants' energy efficiency, as they will allow the country to use its own production as supply.

Following the start of the first offshore licensing round in Lebanon, the government thus decided to change its main energy source from oil to natural gas (Moore and Collins 2020). Lebanon plans on running its power plants on natural gas once its domestic production begins, if commercial discoveries are made (Sia Partners 2019). Such a decision would have beneficial consequences for the country. Switching to natural gas would increase the efficiency of Lebanese power plants, since the latter were originally designed to run on gas and not on oil (AUB Policy Institute 2018). Besides, the Ministry of Energy and Water declared that Lebanon would save around USD 1,9 billion $ on its annual energy bill if it switched to natural gas, as power generation costs will decrease (AUB Policy Institute 2018; Fattouh and El-Katiri 2015).

However, Lebanon needs to find interim gas sources until it is able to use its own. Importing natural gas will allow Lebanon to be ready to assimilate its own production when possible; in fact, importing requires the construction of infrastructure and the establishment of end-users market, which are also vital for the assimilation of domestic production (Fattouh and El-Katiri 2016). The Lebanese government should therefore invest in the construction of new pipelines and of new gas-fired power plants.

Although importing natural gas from neighboring countries through pipelines might prove cost-efficient, it could be subject to disruption due to political instability, as was the case when Egypt supplied Lebanon with gas through the Arab Gas Pipeline in 2009 (AUB Policy Institute 2018). Syria, on the other hand, has been unable to secure the Lebanese demand for natural gas as its domestic production did not suffice for its own demand (Ghoble 2018). Lebanon's lowest cost option would be to import natural gas from Israel, but the two countries lack diplomatic ties and are still officially in a state of war. Another option would be to import natural gas from Iran, but the state suffers from a lack of funding resulting from international sanctions; besides, depending on Iran for energy would strengthen the already strong Iranian influence on Lebanon through Hezbollah, and would thus lead to political tensions.

Importing gas through pipelines thus seems nearly impossible. LNG might therefore be Lebanon's best solution to import gas, although it is more expensive than the use of pipelines (AUB Policy Institute 2018; Fattouh and El-Katiri 2016). Resorting to the import of liquefied gas calls for the construction of an FSRU, which would allow for the regasification of the hydrocarbon (Fattouh and El-Katiri 2015). A tender was launched in May 2018 for the design and operation of three floating regasification import terminals in the cities of Beddawi, Selaata and Zahrani (AUB Policy Institute 2018). The construction of an FSRU on the Lebanese coast is a good step towards the concretisation of the government's pledge to switch to natural gas; however, Lebanon should downsize its objective, as one FSRU would suffice for the country's natural gas imports (Nakhle 2020).

Switching to natural gas would also increase environmental benefits (Fattouh and El-Katiri 2015). In fact, natural gas is a bridge fuel that can aid in the transition to renewable energy, as it emits less carbon dioxide than other hydrocarbons (Stergiou 2019). Increasing the share of natural gas in Lebanon's energy mix would therefore open the door to an increased share of renewables.

The renewable energy sector was already existent in Lebanon, although its impact on energy production was feeble. In 2007, the Spanish government and the Spanish Agency for International Cooperation and Development funded the first three phases of a development project in Lebanon called CEDRO; this project was carried out by the United Nations Development Program (UNDP). CEDRO, which is the Community Energy Efficiency and Renewable Energy Demonstration Project for the Recovery of Lebanon, aims to recover, reform and reconstruct Lebanon's energy sector. The fourth phase of the project, which was funded by the European Union, began in 2014 and ended in 2016. CEDRO focused mainly on the application of energy efficiency and renewable energy projects, on awareness raising, and on renewable energy policy-making support (United Nations Development Program 2014).

In 2009, the Lebanese government pledged to include 12% of renewables in its energy mix by 2020 at the Copenhagen Climate Summit; such a commitment was made official by the Policy Paper for the Electricity Sector, released by former Minister of Energy and Water Gebran Bassil in 2010 (Bassil 2010; Khodr and Uherova Hasbani 2013). Subsequently, the Council of Ministers adopted the Lebanese Center for Energy Conservation's roadmap in 2011; the first National Energy Efficiency Action Plan (NEEAP) mapped out Lebanon's energy conservation goals as well

as the government's pledge to increase the share of renewables (Lebanese Center For Energy Conservation 2011). The plan also called for the institutionalization of the LCEC as Lebanon's national agency of energy efficiency. The LCEC was created by the Lebanese Ministry of Energy and Water and the United Nations Development Program in 2002. It is an independent technical center which guides the Lebanese government and energy ministry in policy-making relating to energy efficiency and renewables (Moore and Collins 2020). Following the 2011 NEEAP, the LCEC became a national agency. However, the NEEAP has not led to satisfactory results as renewable energy made up less than 2% of Lebanon's energy mix by the end of 2015 (International Energy Agency 2018).

A second NEEAP was adopted by the Council of Ministers in 2016; the plan covered the period from 2016 to 2020 and also mapped out the increase of renewables in Lebanon (Lebanese Center For Energy Conservation 2016). Such a roadmap was highlighted in 2017, when former Minister of Energy and Water César Abi Khalil declared his objective of developing the renewable energy sector in Lebanon (Moore and Collins 2020; Sia Partners 2019). Moreover, in 2018, the Lebanese government pledged to produce 30% of Lebanon's electricity and heating through renewables by 2030 (IRENA 2019). However, the commitments of the second NEEAP were not carried out as renewable energy still represents a very small share of Lebanon's energy mix in 2020 (International Energy Agency 2018). In 2019, renewable energy contribution to power in Lebanon was around 4 to 6%, solely through hydropower (Moore and Collins 2020).

The Lebanese government wished to broaden the implementation of renewables in the country by making them accessible to private actors. In fact, the government issued Law 462 on the regulation of the electricity sector in 2002; such a law calls for the creation of an energy regulatory entity which would have authority over the energy sector. Moreover, the law provides independent power producers the right to participate in electricity production following the obtaining of a license from the Energy Regulatory Authority (Republic of Lebanon 2002). However, Law 462 has yet to be implemented and the Energy Regulatory Authority has yet to be created.

In the long term, the Ministry of Energy and Water aims for renewable energy to be solely produced by the private sector (Al-Ferzly 2019). The Lebanese Central Bank, supported by the European Union, started the National Energy Efficiency and Renewable Action (NEERAP)

financing program in 2010; such a program gives loans to private entities to install renewable energy projects for individual consumption (Lebanese Center For Energy Conservation 2020). The NEERAP led to the democratization of solar powered water heaters; in fact, the latter's construction was subject to interest free loans by the Lebanese Central Bank in order to kick start their accessibility to individuals (Moore and Collins 2020).

Besides, the Lebanese government is also establishing national renewable energy projects; the Ministry of Energy and Water wants to encourage the private sector to participate in renewable energy projects by leading by example (Nasr 2020). The Beirut River Solar Snake is a national photovoltaic power project established on the Beirut River bed since 2012. The objective of such a project is to cover around 7 kilometers of photovoltaic panels, which will add 10 megawatts of electricity to the national grid. In 2020, only the first phase of the project was implemented, contributing to 1 megawatt of electricity, and covering a small portion of the planned 7 kilometers (Moore and Collins 2020; Nasr 2020). In 2018, Electricité du Liban launched a tender to implement a new phase of the Beirut River Solar Snake, which would consist of 7 megawatts of electricity, thus getting closer to the initial 10 megawatts objective (Nasr 2020).

In 2018, Lebanon signed its first wind energy agreement in the northern city of Akkar, with the initial capacity of 200 megawatts (Moore and Collins 2020). The Akkar wind farm is the first public-private energy project taking place in Lebanon; three private actors, Sustainable Akkar, Hawa Akkar and Lebanon Wind Power will operate the wind farm and sell the generated electricity to Electricité du Liban through a power purchase agreement (Kanaan 2019). The project has since its announcement been downsized to about 180 megawatts. The construction of the Akkar wind farm was due to begin in September 2019 and to be completed in the summer of 2020; energy generation was supposed to begin in January 2021 (Kanaan 2019; Sustainable Akkar 2020). However, the events that have happened in the year 2020 might have delayed the construction of the wind farm, which could possibly delay the beginning of power generation.

Lebanon benefits from the adequate meteorological and geographical settings for the use of diverse renewable energy systems (Al-Ferzly 2019). With 300 days of sunlight per year, solar power offers a great alternative energy source; besides, the Lebanese mountains and the Bekaa region are vast enough to harbor wind farms. There are many opportunities for the use of renewable energy in

Lebanon. The Lebanese government plans on launching an investment program for the construction of three gas-based power plants through the private sectors, in the three cities where FSRUs are planned on being constructed (World Bank 2019). Moreover, a feasibility study has been conducted for the establishment of a solar farm in the village of Tfail, in the Bekaa valley; the location benefits from high levels of solar radiations and would deliver 600 GWh of energy per year (Moore and Collins 2020).

Potential discoveries could make Lebanon an important actor in regional energy diplomacy

Energy diplomacy is defined as government-related foreign activities that aim to ensure energy security while promoting business opportunities related to the energy sector (Griffiths 2019). Energy security differs for consuming and producing countries; for consumers, it is the securitization of energy for national consumption, while for producers, it is the securitization of foreign energy markets for the sale and export of their product (Yergin 2006).

Energy diplomacy is becoming an important tool of foreign policy in the current structure of energy geopolitics. In fact, the world is witnessing a switch from traditional energy sources such as oil to other, less polluting and clean sources such as liquefied natural gas and renewables. The widespread diffusion of LNG and clean energy into global markets will have a deep impact on energy geopolitics, as power relations between producer and consumer states will not depend on the scarcity and geographical concentration of energy, and the localization of energy routes (Griffiths 2019).

Lebanon's geographic position gives it the possibility of exporting its potential hydrocarbon findings through pipelines to regional countries. Besides, regional pipelines are the less expensive export option regarding infrastructure. The Levantine region suffers from a shortage of natural gas, which could be alleviated by Lebanese gas exports (Fattouh and El-Katiri 2016). Lebanon maintains stable relations with its neighbors, namely Syria, Jordan and Iraq; the latter would all be greatly interested by Lebanese natural gas as they are trying to diversify their energy sources (Sia Partners 2019). Israeli gas will be a competitor for Lebanese gas; since Israel has a head start in energy production, it will lock neighboring countries in long term gas contracts before Lebanon has the chance to develop its hydrocarbon sector (Fattouh and El-Katiri 2016). Israel has, in fact, signed long

term contracts with both Jordan and Egypt; however, growing tensions between Jordan and Israel might lead the Jordanian government to consider diversifying its gas sources (Suleymanova 2020; Tayseer and Benmeleh 2018). Syria and Iraq, on the other hand, do not have diplomatic relations with Israel, which would make them potential export markets for Lebanese natural gas. However, both Syria and Iraq suffer from unstable political contexts, which represents a risk for energy exporters. The Middle Eastern projected gas demand is of 646 bcm for 2030 and of 807 bcm for 2040, according to the International Energy Agency's energy outlook (International Energy Agency 2019b). Such a high projected demand means that Lebanon will not face a scarcity of export markets for the natural gas it could potentially discover.

Direct neighbors are not the only potential markets for pipeline exports; Lebanon could also export natural gas to Turkey and to the European Union. Turkey's ambition of becoming the region's hydrocarbon hub through pipeline passage makes it a potential candidate as a transit country (Wigen 2012). Lebanese gas would interest Turkey itself, as the country highly depends on imported Russian natural gas and wants to diversify its sources. As a large part of the infrastructure is already existent, building pipelines connecting Lebanon to Turkey would be economically viable for the Lebanese government. Moreover, by passing through Turkey, Lebanese gas would easily be delivered to European markets. The European Union wants to diversify its energy sources in order to alleviate its dependency on Russia, and to thus increase its energy security. Seeing as it is highly interested in the EastMed pipeline, it would also be interested in importing Lebanese natural gas. Exporting hydrocarbons to Turkey and the European Union would greatly benefit Lebanon. On one hand, exporting to Turkey would integrate Lebanon to the regional gas market and provide Lebanon with a strong and stable ally; on the other, exporting to the European Union would provide Lebanon with a stable, long-term export market (Fattouh and El-Katiri 2016).

Exporting through pipelines is therefore the most economically viable option for Lebanon, given the relatively low cost of infrastructure construction. Pipelines also give Lebanon the option of resorting to exporting its hydrocarbons if its reserves turn out smaller than projected. Given how recently the Lebanese potentiality of hydrocarbon discovery was established, Lebanon will be one of the last countries of the Eastern Mediterranean region to export, if and once commercial discoveries are made (Fattouh and El-Katiri 2016). Lebanon could therefore be obligated to target more geographically distant countries. In order to do so, Lebanon will have to resort to export its

natural gas as LNG (Sia Partners 2019). In fact, LNG is seen as the most attractive way to export Lebanese gas. It is the most flexible option for gas exports, as it allows access to extra-regional consumer markets. Moreover, LNG can be supplied through long-term contracts, similarly to pipeline exports, but also on a spot market basis. Exporting natural gas as LNG would place Lebanon as a global gas supplier, not a regional one, which is a geostrategically desirable position (Fattouh and El-Katiri 2016). However, as LNG exports would lock Lebanon in 15 to 20 years-long contracts, there needs to be certainty around the sufficiency of Lebanese potential resources to be exported. Moreover, there is an important possibility that many parts of the world will be locked in long-term contracts with emerging LNG exporters such as Australia, as well as East African and North American countries (Fattouh and El-Katiri 2016).

Building a liquefaction plant in Lebanon might not be economically viable for the country. However, in case Lebanon decides to develop its own LNG infrastructure, it could follow the steps of Cyprus, given both countries' limited budget (Fattouh and El-Katiri 2016). The consortium operating in Lebanon could pay for the high cost development of upstream and liquefaction facilities, and be compensated via the revenue stream. While this option allows Lebanon to work alone, without any other state, it still renders the country dependent on the operating consortium. Moreover, this option would leave Lebanon with a minimal share of the profits.

Lebanon could also join an Eastern Mediterranean neighbor in order to be able to export LNG. In fact, Lebanon could export LNG through shared infrastructure with Cyprus, given their offshore proximity. Moreover, Lebanon and Cyprus could exploit their offshore hydrocarbons under the joint development model, with profits being equally shared amongst the two states (Aboultaif 2017). However, this step might only become viable at a much later stage, once both countries have started producing and monetizing their respective hydrocarbons. Another option would be to direct Lebanese gas to the LNG facilities of Egypt and Jordan, in order to liquefy and then export it (Weiss 2019).

Natural gas findings and exploitation could be the opportunity for a reconciliation between Lebanon and Israel. As was explained in previous chapters, Israel is an important actor in the energy geopolitics of the Eastern Mediterranean. The Israeli government is taking part in numerous energy projects and therefore has access to hydrocarbon infrastructure; the Lebanese government,

however, refuses to join any project in which Israel partakes. Any rapprochement with Israel is hampered by the current relations nurtured by both states, as the latter are in a state of war and are extremely hostile with one another. Commercial agreements thus seem politically impossible as Israel and Lebanon do not maintain diplomatic ties.

Forming a regional LNG hub with Cyprus and Israel would however be commercially desirable as it would allow Lebanon to save on infrastructure costs, to join existing contract structure and to be more regionally integrated with its neighbors (Fattouh and El-Katiri 2016). The proximity of the three states and the intersection of their maritime areas render the joint development model of hydrocarbon exploitation particularly attractive (Aboultaif 2017). However, the lack of diplomatic relations between Lebanon and Israel precludes the three countries to use such a model of hydrocarbon activities. Another model could be envisaged in the case of Lebanon and Israel; the trustee development model. The latter is used when states have incompatible relations and suffer from a fragile regional context. The trustee development model requires states to give up their exploration and exploitation rights to a third party, in exchange for an allowance from said party (Aboultaif 2017). In this case, international arbitration would be needed to settle the offshore territorial dispute between Lebanon and Israel beforehand. However, for an international arbitration to be possible, the countries would have to recognize each other internationally first (Huet 2013). It might be too late for the two countries to use the trustee development model as Lebanon and Israel have already licensed petroleum firms to explore and exploit their maritime territory, including the disputed area. International arbitration will therefore only help in the management of offshore resources and in the de-escalation of the territorial conflict between the two states. However, such an outcome would be greatly beneficial, as a de-escalation between Lebanon and Israel would allow the countries to get past their perpetual state of war. In turn, it would allow Lebanon to join energy projects even when Israel partakes in them, making Lebanon more active in the regional energy landscape.

In order to position itself as a reliable global natural gas supplier, Lebanon needs to stabilize its internal political situation. Political deadlocks as well as domestic conflicts cause delay in supply, which represents high risks for the energy security of importing countries; an unstable domestic context can therefore be harmful for potential Lebanese hydrocarbon deals (Fattouh and El-Katiri 2016). Stabilizing itself internally would allow Lebanon to become an unavoidable and essential

actor in regional energy geopolitics, and to thus fully integrate in the Eastern Mediterranean regional dynamic.

Section B- An instrument of regional integration

Currently, the Eastern Mediterranean region is defined by discord more than cohesion. The region is characterized by active and passive conflicts, non-existent relations as well as fragile relations between states. However, this was not always the case: during the Roman and Ottoman eras, the Mediterranean was a united economic and political area, which was highly coordinated and secure (Rubin and Eiran 2019). The recent hydrocarbon discoveries in the offshore areas of states, combined with already existing political disagreements led to the increase of hostilities between Eastern Mediterranean neighbors. Such discordance is largely due to the unilateral responses adopted by states in order to face problems and conflicts.

In fact, and as was explained in previous chapters, the Eastern Mediterranean is a regional security complex. In a regional security complex, security issues and political instability emanating from a state will have an impact on all the states of the region (Buzan and Waever 2003). For example, internal instability in Egypt in 2009 led Bedouins to bomb the Arab Gas pipeline in order to protest the Egyptian government; such revolts have deeply impacted countries in the Eastern Mediterranean that depended on Egyptian natural gas supply to ensure their energy security. Other issues, such as foreign market securitization for the monetization of hydrocarbons, and the protection of the Mediterranean Sea against pollution linked to hydrocarbon exploitation, also impact all countries in the Eastern Mediterranean. Therefore, the countries located in the Eastern Mediterranean should cooperate, and not act unilaterally, as they have done until now.

The complex security challenges occurring in the Eastern Mediterranean, as well as the issues pertaining to the region such as building hydrocarbon infrastructure, controlling environmental damage, and demarcating borders to prevent territorial disputes, call for the establishment of a regional agenda, instead of numerous national ones (Rubin and Eiran 2019). The recurrent political turmoil in the region, the recent hydrocarbon discoveries, and the changes in regional geopolitics create strong incentives for a coordinated regional maritime policy; interstate coordination would maximize economic and security gains for all countries in the Eastern Mediterranean.

Energy in the Eastern Mediterranean could help states increase their stability by kick starting overdue legal processes regarding the definition of maritime boundaries and by setting up a gas diplomacy network. Moreover, energy can instill multilateral cooperation in the Eastern Mediterranean, as hydrocarbon monetization is often facilitated by multistate collaboration. Finally, energy can incite the regional integration of states in the Eastern Mediterranean.

Increasing stability

Gas reserves are a diplomatic tool that reflects the political will of actors (Baconi 2017). They can be a catalyst for revived relations if the parties want positive interactions, or a source of tensions if the parties want to wallow in disagreement, or are uninterested in rapprochement.

The discovery of hydrocarbon fields in the Eastern Mediterranean has prompted some neighboring states to define their common maritime borders in order to avoid repartition conflicts. Egypt and Cyprus were the first states in the Eastern Mediterranean to establish their respective maritime boundaries through bilateral agreements. Egypt and Israel demarcated their border in 1995 through the Oslo agreement, while Egypt and Cyprus signed their EEZ delimitation agreement in 2003. Cyprus has delineated its maritime borders with Lebanon in 2007; the agreement is however not considered as legal by Lebanon as the Lebanese Parliament has not ratified it. Cyprus and Israel have also signed an EEZ bilateral treaty in 2010. In August 2020, Greece and Egypt signed an agreement to demarcate their respective maritime zones; such a treaty was done in order to counter the Turkish-Libyan EEZ treaty, which intrudes on Greece, Egypt and Cyprus' maritime territories (Mourad and Fahmy 2020).

However, although many states in the Eastern Mediterranean have concluded maritime border agreements with neighbors, the majority nurture a border dispute with at least one other state.

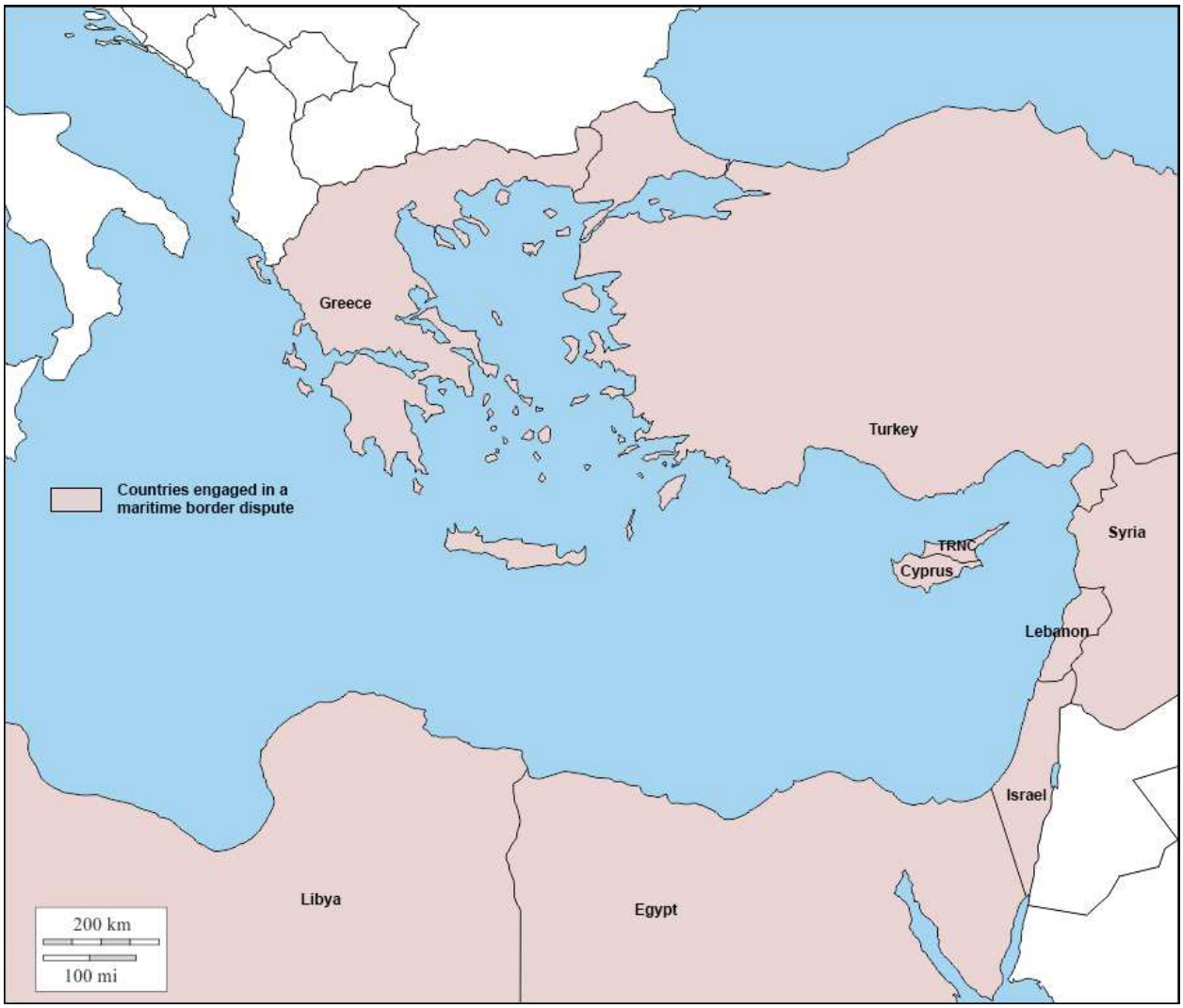


Figure 14 Map representing countries engaged in maritime border disputes in the Eastern Mediterranean (source: author)

Conflicts over disputed areas often deter hydrocarbon firms from investing in said area and initiating exploration projects in the region. Most states in the Eastern Mediterranean depend on multinational firms for petroleum activities; political and legal instability can thus hamper a state's ability to monetize its gas findings by driving away potential investors (Rubin and Eiran 2019). It is therefore crucial for states to come to an agreement about the boundaries of their EEZs and to regulate the maritime legal regime of their offshore areas. Past hydrocarbon findings and prospects of new discoveries should therefore act as a catalyst for border dispute resolution, as the latter will increase the likelihood of foreign investments and monetization. Settling boundary disputes is therefore a win-win game for involved states, both politically and economically; relations are more

stable due to the settlement of the dispute, and economic benefits can be reaped as newfound stability will attract foreign investors.

The process of using hydrocarbons to improve relationships between states and thus instilling cooperation in the energy sector is called energy diplomacy (Goldthau 2010). Energy diplomacy also allows states to ensure their energy security; importing states secure access to energy supplies and exporting states secure client markets to sell their product (Griffiths 2019; Yergin 2006). Energy diplomacy can calm tensions as it did between Israel and Turkey; the prospect of profiting from establishing a pipeline route from Israel to Turkey for hydrocarbon transit prompted countries to see past their enmity. While the relationship between Israel and Turkey is still ridden with tensions, the two states are tied by energy diplomacy. Such a type of diplomacy can also act as a catalyst for political discussions, thus offering stability and confidence building to countries, as was the case between Israel and Egypt (Baconi 2017).

The contested maritime blocks in the offshore areas claimed by Lebanon and Israel have become a source of conflict for the two countries; both states fear an escalation of the situation, which could potentially turn into an armed clash. Such a conflict would have detrimental consequences not only for Lebanon and Israel, but also for all the countries of the Eastern Mediterranean, according to the regional security complex theory. It is therefore crucial for Lebanon and Israel to come to an agreement regarding their maritime boundaries. In order to settle the maritime dispute, Lebanon and Israel will first have to recognize each other as sovereign states; this step is crucial as both countries would not be able to sign a maritime border agreement without recognizing each other. Moreover, Lebanon and Israel will not be able to ask for international arbitration through the International Justice Court without recognizing each other first. Another option would be to settle the dispute through arbitration from the International Tribunal for the Law of the Sea; however, only signatories of UNCLOS have the right to recourse to it, and Israel did not sign the convention (Huet 2013).

Conflict resolution between Cyprus and Turkey is also hindered by the mutual non-recognition of the states. The dispute is all the more complicated as it involves a supplementary actor, the Turkish Republic of Northern Cyprus, which is only recognized by Turkey. The Turkish government adamantly fights for the right of Turkish Cypriots to be recognized and to profit from the Cypriot

coast's hydrocarbon riches. The discovery of the Aphrodite gas field in 2011 prompted reunification talks between Cyprus and the TRNC; the prospect of economic benefit therefore incited both entities to settle the conflict. However, negotiations were halted following the further degradation of relations between Cyprus and Turkey (Vogler and Thompson 2015).

As was said earlier, the Eastern Mediterranean is defined by the discordant relations nurtured by neighboring states. Regional countries often engage in conflict resolution efforts through larger alliances with major powers (Bornstein 2018). This was especially the case in the maritime border dispute opposing Lebanon and Israel; the United States, a long-time ally and supporter of Israel, has posed itself as a mediator for the conflict. In order to help resolve the dispute, Secretaries of State Rex Tillerson and Mike Pompeo have often travelled to Lebanon in order to discuss with Lebanese officials.

Instilling cooperation

As was seen previously, multiparty cooperation in the Eastern Mediterranean is motivated by the expected economic gains resulting from the monetization of hydrocarbons (Rubin and Eiran 2019). The gas findings in the Eastern Mediterranean have thus prompted states to cooperate on energy matters.

Regional interactions have led to advanced efforts to institutionalize cooperation on energy matters, especially through the establishment of the Eastern Mediterranean Gas Forum (Rubin and Eiran 2019). As was explained in previous chapters, the EMGF is a multistate forum held between energy ministers from various Eastern Mediterranean countries, namely Israel, Cyprus, Greece, the Palestinian Authority, Jordan, Egypt and Italy. The first forum was held in July 2019, with the presence of the former American Energy Secretary and European Union's Director General of Energy (Stevenson 2019). While three important Eastern Mediterranean countries, Turkey, Lebanon and Syria, were not invited to the forum, the latter still represents a good effort of cooperation as a first of its kind. The political nature of the EMGF was denounced, as the forum appears to be an anti-Turkey alliance rather than a forum of economic purpose (Shama 2019c). In order to enhance cooperation in the Eastern Mediterranean, and to improve the cohesion of neighboring states, the EMGF should aim to add Syria and Lebanon to its attendees.

In January 2020, the countries participating in the EMGF have approved the transition of the forum to a regional organization. Israel, Cyprus, Greece, the Palestinian Authority, Jordan, Egypt and Italy have signed the organization's constitution, which will allow it to consolidate its cooperation activities (Israeli Ministry of Energy 2020). The need to adopt a joint approach to gas exports in the Eastern Mediterranean is due to commercial, technical or political difficulties that prevent each country from exporting gas independently (Baconi 2017). Natural gas finds call for exportation through liquefaction facilities or integrated pipeline systems. In the Eastern Mediterranean, all export options call for cooperation, due to the region's lack of existing infrastructure. As a regional organization, the EMGF will be able to lead more concrete actions regarding energy matters, especially for the export of the latter.

The EMGF aims to coordinate the joint utilization of already existing hydrocarbon infrastructure. The Eastern Mediterranean's only liquefaction facilities are in Egypt; such facilities are coveted by all the neighboring countries, which wish to export their own hydrocarbon, or prospective hydrocarbon discoveries, through them. Exporting natural gas through Egypt's Damietta and Idku facilities would be beneficial for Israel and Cyprus, since they are already producing hydrocarbons and want to monetize them. Using Egyptian natural gas facilities would also be advantageous for Lebanon and Syria, since the two countries are currently exploring their offshore areas in the search for hydrocarbon fields. Such an arrangement would also benefit Egypt, as the Egyptian government had to shut down its Idku liquefaction facility following the economic crisis induced by the COVID-19 pandemic (Stevenson 2020)**.** Routing all the regional natural gas production to the same export facility would divide the running costs of the infrastructure for Egypt, while helping other Eastern Mediterranean countries save on infrastructure costs and monetize their resources.

Joint infrastructure utilization not only concerns LNG, but also pipelines. The only trans-territorial pipeline in the Eastern Mediterranean is the Arab Gas Pipeline. The pipeline starts from Egypt and passes by Jordan, Syria and Lebanon. The Arab Gas Pipeline is supplemented by other smaller pipelines; the Egypt Gas pipeline links the rest of the Egyptian territory to the city of Arish in the Sinai Peninsula; while the Arish-Ashkelon pipeline links Egypt to Israel, without passing by the other Arab countries. Israel and Jordan also have a connecting pipeline which facilitates Jordanian hydrocarbon imports from Israel. An extension of the Arab Gas Pipeline was planned to elongate

the route through the north of Syria in order to reach the city of Kilis in Turkey. From there, Eastern Mediterranean natural gas could be linked to the Turkish hub, and be exported to Europe or Central Asia. Such a regional routing of natural gas would allow Eastern Mediterranean countries to increase collaboration with Turkey, which has been isolated from its neighbors until now. This project was supported by the European Union prior to 2011; however, it was nullified by the Arab spring revolutions (Tagliapietra 2013).

The EMGF also aims to help members ship in to build new infrastructure. Constructing new facilities would only be economically viable if many states could process their natural gas in it. Multistate pipeline projects would also require cooperation as the piping will have to cross land and sea territories in numerous states; the pipelines will also need to be protected along their length, which means countries will have to invest in security measures (Rubin and Eiran 2019). All hydrocarbon export options are therefore dependent on regional interdependence, with financial, security and infrastructure dimensions.

Such a need for cooperation was already demonstrated in the establishment of the most notable multilateral energy infrastructure project in the Eastern Mediterranean, which is the East Med pipeline. The East Med pipeline is a project proposed by Israel, Cyprus and Greece; it is an underwater pipeline that will allow the transit of gas from Israel and Cyprus to Greece and finally Italy (Weiss 2019). The pipeline is one of the most expensive hydrocarbon infrastructure projects of the decade, with a cost of €7 billion EUR (Macaron 2019). Routing hydrocarbons from the Eastern Mediterranean to Europe represents a chance for Europe to diversify its energy sources away from Russia's current monopoly; the East Med pipeline is therefore designated as a Project of Common Interest by the European Commission, which has funded East Med's feasibility studies during its first phase (Amsellem 2016; Baconi 2017). The final pipeline agreement was signed by Israel, Cyprus and Greece in January 2020; Italy, on the other hand, has yet to sign the final agreement. Italian Foreign Affairs Minister Luigi di Maio displayed reluctance to Italy's participation in the project, due to the high construction costs (The Times of Israel 2020). While the cost of the East Med pipeline is undeniably very high, it is important to say that such costs will be shared by all participating countries. It is therefore a cooperative project, pushed forward by the Israeli-Cypriot-Greek axis. The costs of the East Med pipeline would have been mitigated if numerous other Eastern Mediterranean countries would have participated, such as Egypt, which

already produces natural gas, and prospectively Lebanon and Syria, which are exploring their respective offshore areas. The East Med pipeline is a good example of multilateral cooperation instilled by energy resources; by expanding its scope in order to involve more countries, the pipeline would be less expensive and thus more cost effective.

Moreover, maritime issues, such as naval security and maritime pollution, can be dealt with more effectively when states cooperate, given that such issues are often characterized by transnational activity, cross-border jurisdiction and interdependence (Bueger and Edmunds 2017).

The settlement of maritime border disputes will highly contribute to the heightening of states' naval security. Besides, jurisdictional issues must be settled in order for hydrocarbon firms to be interested in developing the energy resources of a certain region (Fettweis 2009). While militarization is a way of enhancing energy security, so is cooperation; by cooperating, states can ensure their energy security on a longer span, while using smart power, and thus cutting down on hard power expenses such as defense budgets (Luft and Korin 2009). Reducing military hostility between states in the Eastern Mediterranean will also allow them to increasingly focus and cooperate on transnational issues affecting all of them, such as maritime pollution.

The European Environment Agency published a report regarding high priority environmental issues in the Mediterranean in 2006 (European Environment Agency 2006). The assessment of the Eastern Mediterranean coast is stern. The southern coast of Cyprus is densely populated and receives around 3 million tourists per year. Such a dense human presence leads to major environmental concerns, such as beach erosion and water pollution. The Israeli coastline, which is the most densely inhabited zone of Israel, is also subject to pollution by industrial and urban wastewater, although most of them are treated in plants. As for the Palestinian shoreline, it is also untreated wastewaters, combined to coastal industries, that contribute to its pollution. The Egyptian coastline is also an area of concern, as untreated waste waters make their way into the sea. Water pollution in Lebanon is due to the discharge of untreated wastewater into the sea, and to the important urbanization of the Lebanese coastline. Moreover, Lebanon suffered from an oil spill in 2006, caused by the Israeli bombardment of the Jiyyeh power plant; the spill affected around 150 kilometers of Lebanese shoreline. The Syrian coastline is polluted by wastewaters and solid waste, but also by oil slicks coming from coastal refineries.

The first cause of water pollution in the Eastern Mediterranean Sea is therefore the lack of wastewater management; Israel being an exception. The Eastern Mediterranean is subject to massive touristic fluxes; it particularly suffers from touristic infrastructures, which are paradoxically essential to its economic development. The demographic growth around the Eastern Mediterranean shoreline, combined with the littoralization of human activities, and with the increase of naval maritime traffic, highly increase the pollution risks in the region. Besides, it is also clear that oil pollution along the Lebanese and Syrian coasts raises concerns about the Eastern Mediterranean countries' ability to deal with potential oil spills.

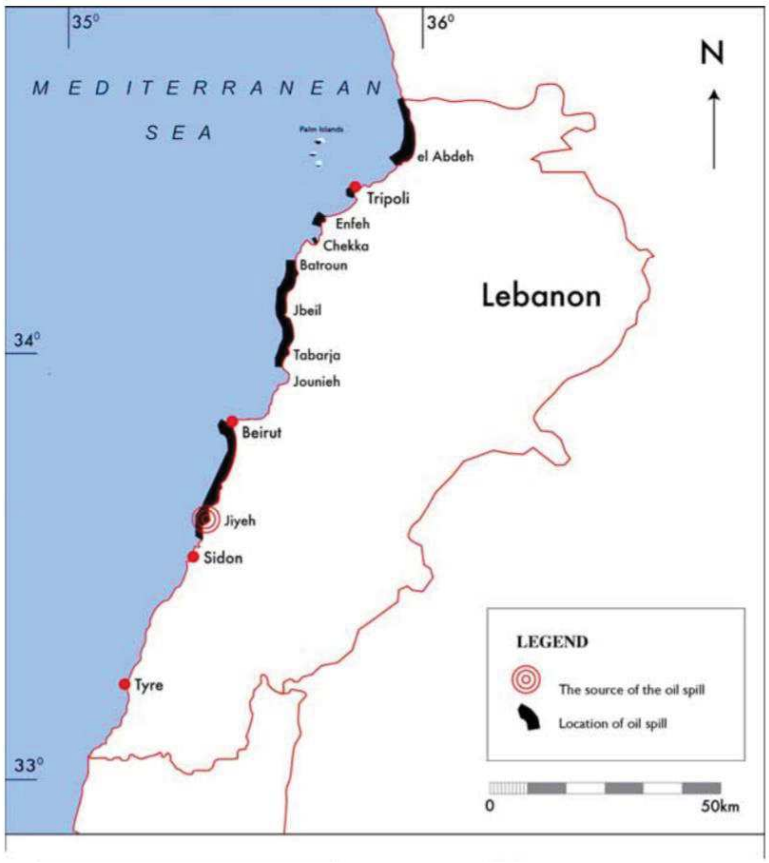


Figure 15 Map representing the zones affected by the oil spill along the Lebanese coast in 2006 (source: The Green Line 2007)

The apolitical nature of environment protection and preservation makes it easier for countries with political discordances to deal with the subject. The management of water pollution is all the more important in the Eastern Mediterranean, since states suffer from hydric stress (Burak and Margat 2016). In its stated main objectives, the Eastern Mediterranean Gas Forum declared its intention to

ensure sustainability and environmental consideration along the entire natural gas value chain (Egyptian State Information Service 2020). The EMGF also aims to facilitate the utilization of renewable energy, thus contributing to the gradual decarbonization of the Eastern Mediterranean energy systems.

Beginning integration

Cooperation between states in a certain geographic area helps said states to build trust towards one another, thus readying the latter for dynamics of interdependence; cooperation thus leads to regional integration (Schmitter 2007). The discovery of offshore gas reserves in the Eastern Mediterranean was thought of as a way to instill regional stability, which would in turn lead to greater cooperation between neighboring states. Such a process would thus result in greater regional integration; in turn, integration would incite stability, and cooperation, as a perpetual cycle.

The European Union has always shown a strong interest in nurturing links with Mediterranean states. The EuroMed Partnership considered the creation of a regional identity, pivoting around the Mediterranean Sea, as primordial. The partnership however hit a deadlock; such a failure was directly due to the impossibility of rallying all Southern and Eastern Mediterranean states under the "Mediterranean" identity. The creation of a regional identity was the political will of the Northern Mediterranean state, aimed to consolidate the fragile cohesion of the EuroMed Partnership through identity and values, similarly to the European Union's model. The creation of a Mediterranean identity collided with the numerous already existing identities in the Mediterranean basin. The EuroMed Partnership evolved into the Union for the Mediterranean; however, the impact of the latter on the states of the region has not been consequential until now.

As was said, the Mediterranean states, and especially the Eastern Mediterranean states, are very heterogeneous. Such core differences prevent the countries from integrating based on their identity, culture or religion. However, another type of integration, based on economic gain, could be envisaged.

According to the economic peace theory, closer economic integration strengthens engagement between allies and creates cooperation between parties that have political grievances (Bijaoui 2014).

Relations based on trade and commerce can continue despite states' political difficulties; the economic peace theory thus offers continuity and stability to the states of a politically unstable region (Baconi 2017). As was explained in the previous chapter, the states of the Eastern Mediterranean are conflict ridden and also stoke discord with one another. The Mediterranean gas finds are thus the opportunity to test the theory of economic peace; integrating the region via hydrocarbon monetization could lead to stability, therefore instilling peace in the Eastern Mediterranean.

Relying on economic peace is all the more important as the Eastern Mediterranean is a regional security complex; security issues in one of the states will have a deep impact on all the others. Binding the states with tight economic relations can therefore ensure that a political deadlock or conflict in one of the countries will not have damaging consequences on the others.

Hydrocarbon discoveries have paved the way to regional integration in the Eastern Mediterranean, especially through the EMGF (Shama 2019c). Some of the forum's objectives include economic integration through the establishment of preferential trade relations between Eastern Mediterranean countries (Egyptian State Information Service 2020). Moreover, the EMGF wishes to deepen awareness on the benefits of regional interdependence between neighboring states. In fact, natural gas can serve to provide a foundation for mutual dependency and cooperation, on the condition that it is met by pragmatism (Baconi 2017).

However, hopes that economic relations could be a source of regional stability should not be exaggerated. Eastern Mediterranean politics have played a complicated role in all the gas deals of the region, even in those that were successfully completed. Existing gas deals will most likely persist amid political tensions between two states, however, political instability makes it impossible to make new deals, especially in the absence of political settlement (Baconi 2017). In the case of Lebanon and Israel for example, agreements in any sector are currently unimaginable, regardless of economic benefit. It would be very difficult for Lebanon to play an active role in any joint regional prospect involving Israel; while Lebanon might engage in a multilateral framework alongside Israel, such an option would be impossible if Israel was the owner or the operator of hydrocarbon facilities (Aboultaif 2017; Baconi 2017; Fattouh and El-Katiri 2016). However, the possibility of cooperation through a joint export framework is not dismissed. Besides, the current

political upheaval in Lebanon, which led to the demission of two successive governments in October 2019 and August 2020 might change the Lebanese political landscape. The Lebanese population is showing growing discontent with the existing political class, which has been an important factor in Lebanon's regional isolation and more importantly in its hate for Israel. In the energy sector, market forces have a higher impact than national policies (Fettweis 2009). Since the economic benefits of a rapprochement with Israel outweigh the political benefits of the current state of war, future Lebanese governments might alter their position towards their southern neighbor.

The Eastern Mediterranean is fragmented along political, religious and ethnic lines. Countries do not sustain heterogeneous alignments as some are highly influenced by the Islamic world, while others are influenced by Western countries; however, such alignments vary greatly depending on the ruling governments. Some countries are under authoritarian rule while others sustain, or try to sustain, democratic practices and values. Such factors hamper the possibility of institutionalized regional cooperation in the Eastern Mediterranean (Rubin and Eiran 2019).

The Eastern Mediterranean Gas Forum therefore represents a chance for the beginning of integration in the region. The EMGF should invite all countries of the Eastern Mediterranean to join and participate. By focusing on energy diplomacy and economic peace, the forum could lead such heterogeneous countries into interdependence and cooperation, which would in turn lead to economic and political benefits. By utilizing energy resources as a way to instill stability in the region, the forum could lead to a decrease in the continual tensions and conflicts experienced by neighboring states until this day.

CONCLUSION

The development of hydrocarbon sectors in Lebanon and in the Eastern Mediterranean were thus undertaken with their share of challenges and opportunities. In this research, the author's objective was to identify the impact of hydrocarbons on domestic and regional stability. As suspected, it was found that energy resources can act both as a factor of national and regional instability, and as a tool of progress and cooperation.

The first chapter was entirely dedicated to the assessment of energy resources in Lebanon and in the Eastern Mediterranean. Throughout the first section, the author explained Lebanon's first reactions to its prospective future as a hydrocarbon producing country. The second section mapped out the regional hydrocarbon discoveries in the Eastern Mediterranean, as well as the nascent hydrocarbon network in the region.

The second chapter analyzed the various drawbacks linked to energy. The impact the resource curse could have on Lebanon, a country that is already ridden by corruption, social dissolution and a teetering economy, was thoroughly examined in the first section. The political disputes and naval arms race triggered by the changing geopolitical landscape of the Eastern Mediterranean, due to the development of energy sources in the region were explored in the second section.

The third and last chapter studied the opportunities unraveled by the development of energy sources in both areas of study. The first section depicted how the prospect of discovery of energy resources prompted Lebanon to take its first steps towards better governance. The second section explained how energy resources could be used as a tool of regional integration in the Eastern Mediterranean.

While both negative and positive aspects and outcomes of energy resources development were underlined in this thesis, it is clear that some outweigh the others. In fact, there seems to be different tendencies, whether on the domestic and regional level.

On the domestic scale, it was found that energy resources did not yet deepen the already existing lack of democracy and development in Lebanon. Lebanon is a deeply tormented country, suffering from the rampant corruption in its political class, the confessionalisation of its politics and society, and the near collapse of its economy. The prospect of hydrocarbon discoveries instilled the government into early spending, which is a red flag of the resource curse. However, such a prospect

also pushed Lebanon towards transparent and accountable governance; the prospect of economic gain and development from hydrocarbon revenue thus prompted Lebanon to establish a strong legal framework aimed at the good management of hydrocarbons. While said framework is deemed as efficient by experts, it is the lack of enforcement that is to be feared. The impact of energy resources development on Lebanese stability is therefore mitigated, due to many reasons. Firstly, Lebanon was already a deeply unstable country, long before the prospects of energy findings emerged. Secondly, the assessment of such an impact is premature, given the fact that Lebanon has yet to make a commercial hydrocarbon discovery.

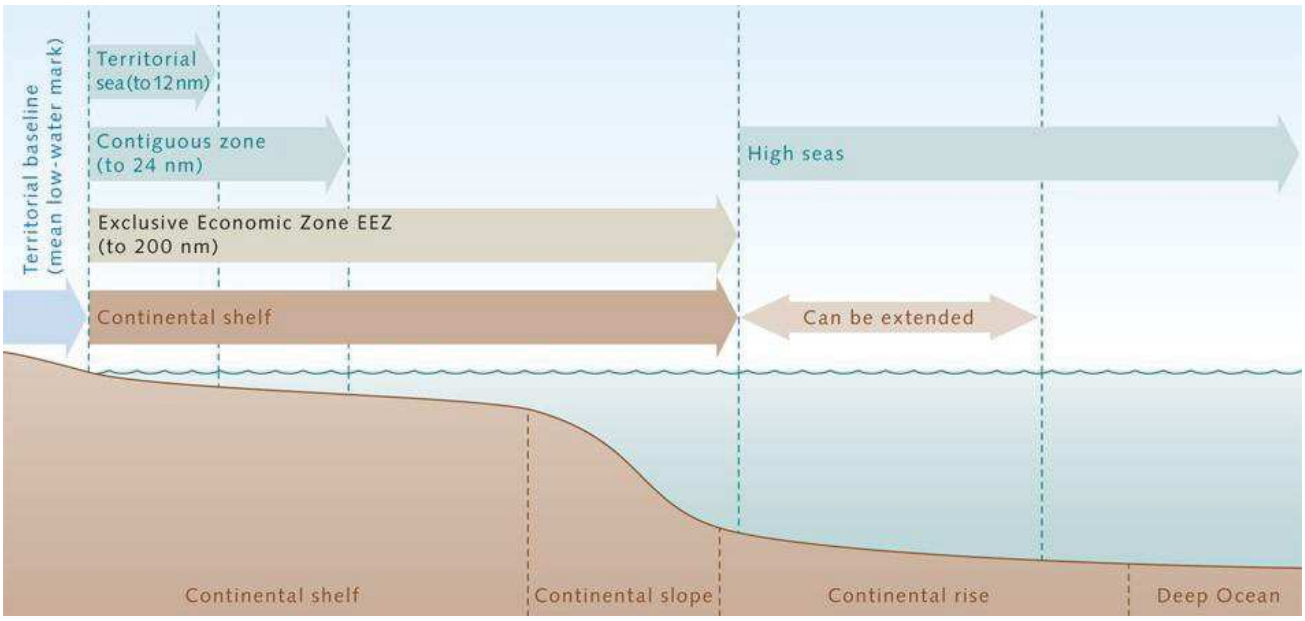
On the regional scale, it seems that energy resources contributed more to discord than to stability until this day. The discovery of offshore hydrocarbon fields provoked disputes between neighboring states. In fact, offshore areas are harder to delimit, to govern and to defend; such a complexity often leads to maritime border conflicts between states sharing the same sea. Moreover, the addition of an energy dimension to the already complicated Eastern Mediterranean political landscape rendered unstable the geopolitics of the region. While energy could be a factor of integration in the Eastern Mediterranean, it is still not the case.

Energy resources could still be an instrument of domestic and regional stability in Lebanon and in the Eastern Mediterranean. The ongoing popular revolutions, coupled with Lebanon's extreme economic crisis, the COVID-19 pandemic, and the recent Beirut port explosion, have successfully put the country in a deadlock that will be hard to escape. Energy resources alone cannot stabilize Lebanon at this point. The Eastern Mediterranean region as a whole has also suffered from the current COVID-19 pandemic, as the latter has changed energy consumption and production patterns. However, the recent launch of the EMGF as a regional organization could be the starting point of regional integration, thus leading to the long awaited stability of the Eastern Mediterranean.

APPENDIXES

R-Factor	State share	Right holder share
R-Factor ≤ 1	30%	70%
1 ≤ R-Factor ≤ 2.5	30% + 16.67(R-1)	100% - State share
2.5 ≤ R-Factor	55%	45%

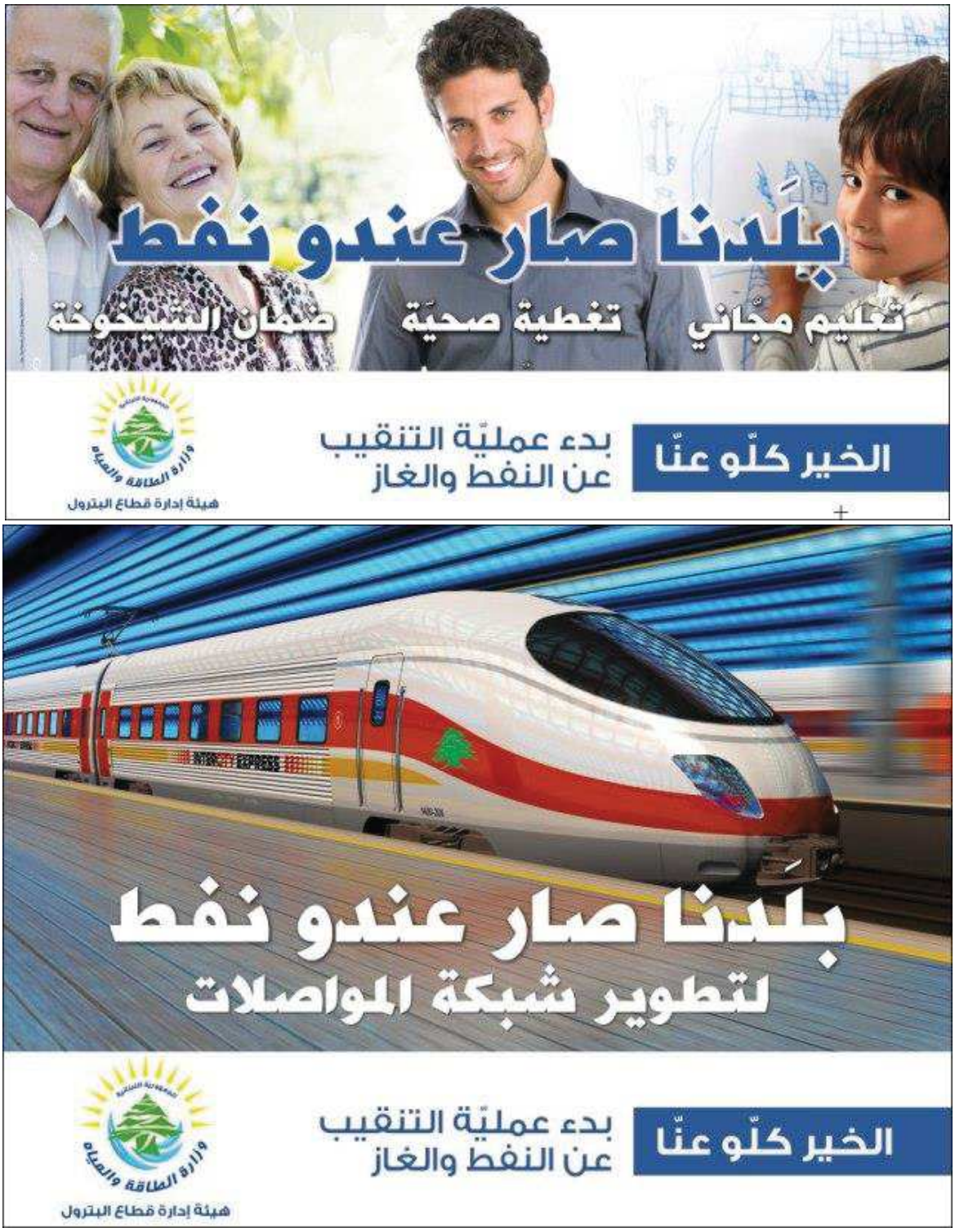
Appendix 1 Mathematical determination of the R-factor in the hydrocarbon profit sharing of Lebanon



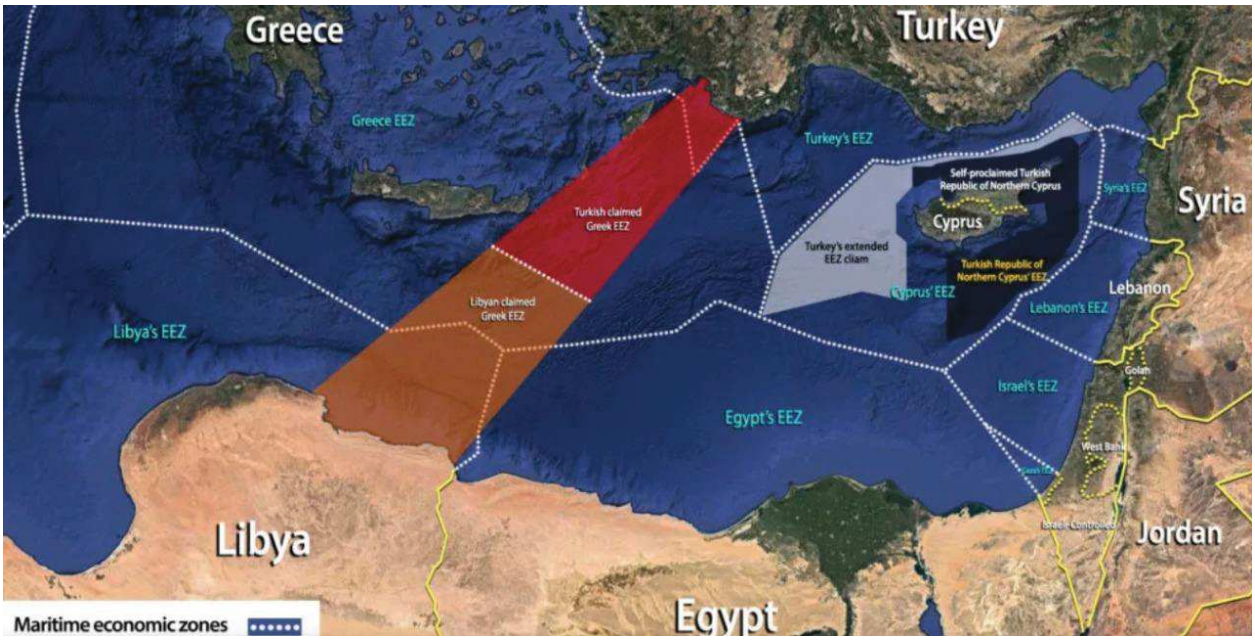
Appendix 2 UNCLOS maritime zoning diagram (source: World Ocean Review 2010)

Appendix 3 Map representing the EuroAsia Interconnector (source: EuroAsia Interconnector 2020)

Appendix 4 Map representing the TurkStream pipeline (source: Russia Business Today 2018)



Appendix 5 Billboards created by the Lebanese Ministry of Energy and Water. Translation of first billboard: "Our country now has oil. Free education, free healthcare, pension. Beginning of hydrocarbon activities in Lebanon". Translation of second billboard: Our country now has oil for the development of transportation infrastructure. Beginning of hydrocarbon activities in Lebanon".



Appendix 6 Turkish-Libyan maritime corridor (source: The Investigative Journal 2020)

Appendix 7 Map representing China's Belt and Road Initiative (source: Der Spiegel 2016)

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