THE POTENTIAL IMPACT OF EASTERN MEDITERRANEAN NATURAL GAS DEVELOPMENT ON THE CYPRUS CONFLICT

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THE POTENTIAL IMPACT OF EASTERN MEDITERRANEAN NATURAL GAS DEVELOPMENT ON THE CYPRUS CONFLICT

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ABSTRACT

THE POTENTIAL IMPACT OF EASTERN MEDITERRANEAN NATURAL GAS DEVELOPMENT ON THE CYPRUS CONFLICT

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There are important natural gas resources in the world. Starting from 2009, it also became an important issue in the Eastern Mediterranean region. Also, there is a significant natural gas reserve close to the Island of Cyprus. As know, there is a conflict in the Cyprus. However, this natural gas development could be used as a tool to solve this conflict. Therefore, the aim of this study is to analyze the possible impacts of this natural gas development over the Cyprus conflict. In order to understand the underlying problems of the dispute, conflict management and energy security theories are used. Also these important theories are supported by the in-depth interviews conducted by the elite executive representatives from both Greek Cyprus and Turkish Cyprus on behalf of analyze the possible solutions for the conflict.

Keywords: Eastern Mediterranean Region, Energy Security, Natural Gas, Turkish Republic of Northern Cyprus, Republic of Cyprus, Conflict Management, EEZ, Political Disputes, International Relations, Energy Policies.

ÖZET

DOĞU AKDENİZ DOĞALGAZININ KIBRIS ÇÖZÜMSÜZLÜĞÜ ÜZERİNDEKİ ETKİLERİ

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Dünya üzerinde birçok önemli doğalgaz kaynakları bulunmaktadır. 2009 yılından itibaren bu konu Doğu Akdeniz bölgesi için de önemli bir hale gelmiştir. Bununla birlikte, Kıbrıs adasının yakınlarında da önemli doğal gaz rezervleri bulunmuştur. Bilindiği gibi, Kıbrıs'ta bir çözümsüzlük vardır. Ancak, bölgedeki doğalgaz gelişimi bu çözümsüzlüğü çözmek için bir araç olarak kullanılabilir. Bu sebeple, bu çalışmanın amacı, doğalgaz gelişiminin Kıbrıs çözümsüzlüğü üzerindeki etkilerini analiz etmektir. Bu çözümsüzlüğün altında yatan nedenleri anlayabilmek için, çatışma yönetimi ve enerji güvenliği teorileri kullanılmıştır. Ayrıca, çözüm için olası sonuçları değerlendirmek adına bu önemli teoriler Kıbrıs Rum ve Kıbrıs Türk elit temsilcileri ile yapılan derinlemesine görüşmeler ile desteklenmiştir.

Anahtar Kelimeler: Doğu Akdeniz Bölgesi, Enerji Güvenliği, Doğalgaz, Kuzey Kıbrıs Türk Cumhuriyeti, Kıbrıs Cumhuriyeti, Çatışma Yönetimi, Münhasır Ekonomik Bölge, Politik Çözümsüzlükler, Uluslararası İlişkiler, Enerji Politikaları.

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CHAPTER 1

INTRODUCTION

Meeting energy demand of the country is one of the most significant aim and strategies for the governments. Energy resources, especially fossil fuels are limited. Accordingly, there is a concept called "*energy scarcity*" in the world. A simple question directly comes to mind: how does energy scarcity occur? There are a number of political and economic crises in the world and natural gas supply is directly affected from these crises and, causing the scarcity of this resource. It is possible to define energy like a ring in the chain; energy scarcity brings the "*energy security"* problem to the top of agenda. Therefore it is among the reasons why alternative regions and resources has been seeking by the countries.

Although other alternative energy sources such as renewable energy has started to develop rapidly in the recent years; fossil fuels are still among the main energy resources of growing populations and expanding economies. In fact, fossil fuels currently account for 87% of the world's final energy consumption (33% oil, 24% natural gas, and 30% coal), renewable resources like 2%, and hydroelectricity account for about 7%, and nuclear power about 4% (BP, 2015)

Anyadiegwu (2013) stated that, world's energy demand is expected to rise; therefore, fossil fuels continue to play a strategic role in energy supply thanks to their abundance,

affordability and availability. Natural gas lagged behind for a long period of time because it is more difficult to transport and store natural gas than it is with oil. However, this situation has started to change rapidly and gas markets continue to enlarge faster than other fossil fuels. Economides & Wood (2009) pointed that natural gas is the cleanest and most hydrogen-rich resource among the other fossil fuels. It has very low CO2 emission and almost zero sulphur emission in power generation especially when compared with coal. The other significant point about natural gas is explained by Okologume (2014) that, it has been discovered in very recent past and as it is yet unexploited, it remains plentiful. Therefore, it is expected that the gas sector is going to show considerable growth over the next two decades and it may even overtake oil as the primary fuel between the years 2020 and 2030 (Economides & Wood, 2009). As mentioned before, there is a significant transition towards natural gas and according to BP (2015) data, natural gas demand share accounts for OECD countries as 31% and for the non-OECD countries as 24%. Furthermore, this demand is steadily increasing mainly because of the interchangeable usage of the fossil fuels. It means that fossil fuels such as coal, oil and natural gas can perform the functions of each other. For instance, Wang & Economides (2009) explained that, with an additional cost, coal can be gasified in order to produce natural gas or natural gas can provide fuel for transportation with additional infrastructure costs. Because of this reason demand for natural gas is going to be higher in the future and it will affect the availability of natural gas in the world. In other words "energy security" will be the critical subject again; therefore, alternative sources are needed.

Firstly Caspian Region was discovered as an energy supplier region and now Eastern Mediterranean Region has manifested itself (Rustamove & Stergiopoulos, 2011).

Recently, the discoveries of new fossil fuel fields in the Eastern Mediterranean region had escalated the importance of the region in terms of a new potential energy supplier in the global energy market. In addition to this, DeMicco (2014) believed that Eastern Mediterranean region has a key role of being an alternative provider of natural gas for the world, since the global gas demand has been increasing rapidly and the proven reserves have been decreasing accordingly. Until the year 2009, the exploration activities were relatively inadequate but starting from that time, the discoveries of offshore gas fields in the region could be labelled as a gas revolution, positioning the region as a new frontier of the offshore gas exploration in the Middle East and North Africa (Oxford Energy Forum, 2013). The main reason that makes Eastern Mediterranean region more important than the Caspian or any other energy region is explained by Polak (2014) as Eastern Mediterranean region is not an energy consumer region. That's why European Union (EU) countries want to use this energy. They especially want to block the unstable Russian strategy and attitude over natural gas. Therefore, this study focuses on the growing importance of Eastern Mediterranean region as an alternative source to the global natural gas demand because of the new and significant discoveries. The global demand for natural gas is rapidly increasing while the world's gas reserves are diminishing. This region holds its importance by being a new supplier of gas that would provide a diversification option for the littoral states, as well as the EU and Asia.

Based on the EIA Eastern Mediterranean Region report (2013), as well as the new discovered natural gas resources in the Eastern Mediterranean region, there is also conflict management in the region which should be considered as well. Continuous

political disputes need to be solved because they could hinder not only exploration and production but also development in the region especially in the Levant Basin. Generally, there is potential risk of cooperation for the maritime boundaries between the countries which are fundamentally the position of Island of Cyprus, Israel and Lebanon boundaries. There are also ongoing disagreement between Israel and Palestine. In addition to this, there is also dispute between Israel and Turkey and regarding transportation of the gas, the minimum cost and optimum transportation routes. In these topics Turkey plays a significant role. The other and main conflict and focus of this study is *Cyprus Conflict*, accordingly the relationship between Turkey and Cyprus and thus the transportation of the natural gas, affected by the political problems. In addition to this, except for the political, relationship related and transportation disputes in the region, another problem is underlined by the Gürel, et al. (2013) which is related with the field ownership. Because of natural gas resources are offshore; it is hard to determine the owner of the natural gas.

By taking into consideration the rapid population growth and accordingly the increase in energy consumption and decrease in fossil fuel energy sources and reserves because they are limited in nature, Eastern Mediterranean Region has a significant role as an alternative energy supplier. However, according to the DeMicco (2014), in order to turn this situation to an advantage with the aim of diversifying both in routes and resources correlatively decrease the costs; these relationships need to be balanced.

This thesis aims to understand the potential impact of discovery of new energy resources in the Eastern Mediterranean on "Cyprus" conflict. The thesis will start with descriptive

analysis of the conflict and then move on to the energy resources and littoral states policies over them. Within this aim to analyze the both Greek and Turkish sides' suggestions for the solution of the conflict and to get more real and deeper solutions, thesis is supported by the "in-depth interview" method. These two elite executives have critical position on the energy politics. The first one which is from the Greek Cyprus is "Acting Director Hydrocarbon Service", Mr. Stelios Nicolaides and the second one from the Turkish Cyprus, Deniz Artun[1] who is acting in Foreign Affairs.

Hence the study aims to answer the following research questions;

i. Which countries have the field ownership in the Eastern Mediterranean region?
ii. How will natural gas be transported from the region?
iii. What would be the impact of Eastern Mediterranean Natural Gas development on the Cyprus Conflict?

The study consists of 8 chapters. Chapter 1 is the *Introduction* chapter. This chapter briefly explains the world's energy demand and accordingly natural gas development as an alternative energy resource. Also analyzes the increased importance of Eastern Mediterranean region in terms of energy security; however, also examines the general disputes in the region, especially focuses on the Cyprus Conflict.

Chapter 2 is the *Literature Review and Methodology.* This chapter examines history and several concepts of Energy Security from different viewpoints. In addition, the concept

[1] Turkish side's representative doesn't want to publish the name; therefore, pseudonym has been used

of conflict theory is also explained in this chapter - the linkages between conflict theory and energy security; field ownership (natural resources) and political conflicts.

Chapter 3 explains the main and possible problems in the region such as field ownership, ongoing political problems such as Israel-the Island of Cyprus-Syria, Turkey-Israel-Palestinian Territories and the Island of Cyprus-Turkey-Greece and also the disputes on the transportation of natural gas via LNG terminal in the Island of Cyprus, Offshore pipeline to Mainland Greece and Sub-sea pipeline from Israel to Turkey are examined.

Chapter 4 discusses the history of Cyprus Conflict as background and current situation. It also consists of the Anan Plan, latest developments on the Cyprus Conflict and the role of guarantor countries: United Kingdom, Greece, Turkey, and EU.

Chapter 5 demonstrates recent natural gas development in Eastern Mediterranean region and its impacts for the world's energy demand.

Chapter 6 discusses the main actors of the new offshore natural gas resources: Israel and Cyprus. In addition, it also explains the general overview of the energy profiles of these two countries, explorations of the natural gas and future plans.

Chapter 7 is the *Analyzing & Findings* chapter. The main aim of this chapter is to demonstrate the results and findings of this study and to associate them with the above mentioned research questions. This thesis analyzes a historical situation and with this aim while making analysis it is looking into two perspectives; conflict theory and for getting real viewpoints it has also supported with discourse analysis with the Northern and Southern parts of Cyprus. It needed to be applied multiple method (conflict theory and discourse analysis) because of the being a historical situation analysis.

Chapter 8 is the Conclusion chapter that will analyze reasons of the Cyprus Conflict and the possible impact of this recent natural gas development for the future of Island of Cyprus.

CHAPTER 2

LITERATURE REVIEW AND METHODOLOGY

Energy security is rather a contemporary issue and its definition is vague. Hence, Massachusetts Institute of Technology (MIT)'s Center for International Studies defined the purpose of energy security in general as;

1. Decreasing energy dependency
2. Trying to prevent the possible risk that could be occurred from the energy supply and
3. Reducing the energy supply risks in terms of both economic and military impact

From this study's perception, this definition works well as a starting point to understand the meaning of energy security.

After the decision of Winston Churchill in World War I to shift the power source of Britain's navy ships coal to oil, energy security became the centre of the national strategy calculations and according to the Yergin (1991) energy security "- as a policy problem - emerged in the early 20th century in connection with supplying oil for armies".

Concerns over energy security are not restricted only with oil. Abbagnara (2013) emphasized that after this energy development Churchill also added the new concepts

into energy such as reliability of supply, variety and accordingly diversification of sources. After the energy security definition in 1991, in 2006 Yergin also stated that "Power blackouts on both the East and West Coasts of the United States, in Europe, and in Russia, as well as chronic shortages of electric power in China, India, and other developing countries, have raised worries about the reliability of electricity supply systems". After the first oil crisis in 1973, the world realized that there could be an energy supply problem. These were the beginning of the realization for energy security and resulted in the beginning of academic discussions about the relationship between energy and international security. Similarly Cherp & Jewell (2014) stated that "Academic reflections on energy security date back to the 1960s (e.g. Lubell, 1961) and came of age with the oil crises of the 1970s. However, there is an important difference between contemporary and 'classic' energy security studies".

In the beginning governments were concentrating on the affordable prices by describing the energy security as "In the 1970s and 80s, energy security meant stable supply of cheap oil under threats of embargoes and price manipulations by exporters" (Cherp & Jewell, 2014). However, after the rising demand in Asia in the 2000s and disruptions of gas supplies in Europe transferred the meaning of energy security from the affordable prices to the availability of the source.

After Daniel Yergin's "The current model of energy security, which was born of the 1973 crisis, focuses primarily on how to handle any disruption of oil supplies from producing countries" statement in 2006, modern energy security thinking has been created. Hence, there are a few energy security definitions as an example within the aim

of understanding the concept of energy security in a broad perspective. Sovacool (2013) stated that “Energy security has in recent years grown as a salient policy and political issue and it's consisting of the interconnected factors of availability, affordability, efficiency, sustainability, and governance”. Furthermore, Intharak, et al. (2007) indicated the definition as “the ability of an economy to guarantee the availability of energy resource supply in a sustainable and timely manner with the energy price being at a level that will not adversely affect the economic performance of the economy”. However Keppler (2007) has developed the concept of traditional energy security which is including short term and long term concepts. Short term concept is the ability to continue the supply of energy; on the other hand, long term energy security concept is supply of energy with a competitive, adequate and affordable price.

On the other hand, there is another group which defines energy security with the perspective of security of supply and security of demand. For instance, Löschel, et al. (2010) claim that there is a direct relationship between the energy security and geopolitical developments and addressing as an example of Iraq war in 2003, natural gas supply crisis in 2005/2006 between Russia and Ukraine. Therefore, it is important to think energy security with a wider perspective of security of supply. Johansson (2013) expressed that "definitions of energy security in the meaning of security of supply usually include an availability aspect (stable and uninterrupted supply) and a price aspect".

In today's world, unfortunately energy security is still a continuous problem. As Yergin's statement, an alternative source could be the key word. There is an energy-rich region in

the world; Eastern Mediterranean, having a volume of 8014 bcm of natural gas according to the United States Geological Survey (2010) data. However there is a conflict inherent in energy. Eastern Mediterranean region also contains some difficulties in itself based on the "field ownership / natural gas problem", "political conflicts" and "transportation problems".

Johansson (2013) also highlighted, regional conflicts, which sometimes even could effect to the security of supply. At this point, conflict management is an important theory to explain the dynamics in the Eastern Mediterranean region in terms of energy security and energy supply. The relationship between energy security and conflict has a critical role. Therefore, it is significant to comprehend the nature of the conflict.

The concepts of resources conflict have been studied by Nicholas Garrett and Anna Piccinni (2012) and they explained the conflict over the natural resources into two sections;

1. The linkages between natural resources and conflict,
2. The reaction of the European Union to the challenges of the natural resource-related security and conflict

There is an interrelationship between natural gas and conflict. However, Grigoriadis (2015) underlined that, for the future this will be a security challenge for EU and it will directly effect to the energy market and the trade partner relationship. Also there is a

BRICS[2] countries in line with their rapid economic growth increased their natural resources consumption. Therefore, Coleman (2012) believed that these countries are also going to be threatened in providing natural resources to EU. This is also one of the most significant topics that governments considered and gave priority to in order to find solutions for the relationship between the fast changing global political economies and natural resources. Therefore, "conflict theory" is an important perspective that should be considered. Back in the history, conflict theory started to be analysed with a significant development in the last two decades within the aim of understanding better the relationship between security and natural resource. The relationship between natural gas and conflict was explained by Garrett & Piccinni (2012) as the following interrelationships; natural resource and conflict finance, natural resource and state effectiveness, climate change conflict, conflict between natural resource exporting and importing countries and EU has also responses to these conflicts; accesses to natural resources, security and climate change -diplomatic engagements for dependency and regional partnerships for economic integration need to be developed.

In terms of security, EU has developed European Security Strategy in 2003 and reflected the uncertain and unspecified difficulties with the aim of prevention of conflict, crisis management and post-conflict stabilization (European Council, 2008). In 2008, ESS has been developed by European Union under the name of "EU security and conflict challenges and consisting of the natural resource related conflict and challenges". Territorial claims are strongly associated with natural resources as in the case with Alsace-Lorraine between Germany and France for its reach for coal and iron reserves.

[2] BRICS countries are: Brazil, Russia, India, China and South Africa

"Studies of interstate territorial conflict have recognized natural resources as one of the elements that makes many territories "salient" or valuable to the claimant states" (Macaulay & Hensel, 2013). In addition to this explanation, Macaulay and Hensel (2013) also believed that natural gas conflict over the territory claims causes the states also armed conflict. Hence, this idea addresses the topic to the natural resources and armed conflict. But the critical issue is the "type of resources"; that's why three hypotheses have been used in their "Natural Resources and Territorial Conflict" study. The first one claim that, any resource component, regardless of type, will cause also armed conflict. It generally tries to explain that, there is a relationship between natural resources and military power. The second hypothesis criticizes the fossil fuels are more likely causes to armed conflict rather than renewable sources. In order to understand the possibility of this hypothesis, it needs to be first identified which sources are considered renewable or fossil fuels. If managed correctly and with cooperation, renewable resources, can be used in infinity, but when overuse is permitted, the resources might be exhausted or might disappear. This situation creates the possibility of conflict. On the other hand, fossil fuels are limited in the nature; therefore, it increases the dispute ratio. The last hypothesis is more specific and directly related with the energy resources and examines the region which is containing energy resources has more possibility to cause armed conflict than the others. The production of energy became a vital topic for any state, and although the type of natural resources have shifted over time (coal to oil, oil to natural gas); however, the importance of energy need is still same because of the energy usage in power industries, transport, household...etc. Additionally states try to control these resources to provide themselves economic security however; energy resources are not easily substitutable and especially for oil remain reserves is still unknown.

Cross-border transportation of natural gas is being discussed from different aspects among the studies. In order to transport the natural gas from extraction point to the customer, there are two ways that are onshore/offshore pipeline system or Liquefied Natural Gas (LNG) terminals. Thomaidis (2008) believed that in this context, when pipeline systems go through different countries with different political, economic, institutional and environmental features, multiple factors have to be taken into account. Similarly, costs that depend on geological characteristics of transit countries and transit fees are important factors. In this study, a natural gas pipeline route selection for the transport the Eastern Mediterranean gas is also going to be analysed in the framework of political and legal issues concerning Turkey, Island of Cyprus and Israel. Among the three projects that could take place in the region, two of them are offshore pipeline plans and the third one is an LNG terminal project.

It is known that mainly there is a political conflict between the Greece - Island of Cyprus and Turkey before the natural resources, territorial and transportation conflicts. However, in terms of energy security and providing the alternative sources with an optimum cost (as previously mentioned the importance); the transportation of the natural gas from Eastern Mediterranean to Europe or other regions has significant importance. In the framework of providing an alternative route for Eastern Mediterranean gas to be supplied in the global energy market, there are some studies which are going to be analysed and which might create a basis for selecting the optimal project for the region's gas potential. Nevertheless, the existing and ongoing conflicts in the region might hinder the realization of any project without the cooperation of the littoral states. Within the existing literature, there are number of articles that would provide a cost efficient,

environmentally suitable or geographically convenient pipeline route for the region but in the literature the political and legal relationship among states that are involved in cross pipeline projects were not so much indicated. That's why this study will focus on these aspects in order to provide insight about the likelihood of the realization of planned projects in the Eastern Mediterranean region that would satisfy all parties.

In the context of LNG terminal projects, Papadopoulou and Antoniou (2014) mention that not only political aspects but also environmental concerns about topography, geology and land use have to be considered when selecting an LNG terminal location and sequential transportation modes of the natural gas. From the view point of pipeline route selection process, Dey (2002) emphasizes that besides technological options, during the planning and design of pipeline projects, environmental and social elements have to be taken into account and believed that it is important to determine the shortest possible route that would connect the extraction and consumption points in order to prevent the reduction of productivity because of incorrect route selection. Generally, selection of the best technical option for pipeline routing is based on financial analysis with further contribution of impact assessments to confirm the selection. However, he proposed an integrated model that combines technical analysis, socioeconomic and environmental impact assessment to address the optimal project of pipeline route selection. According to the Papadopoulou (2014) the alternative locations for the terminal and the pipeline route were assessed by taking into consideration such parameters as safety, existing infrastructure and access.

Moreover, according to Hirst and Ruwanpura (2006) it is essential to setup a balance between the possible capital cost of pipeline and the risks related to the chosen route. Simulation model is used in order to calculate the costs of pipeline routes among several alternatives because any small change in the route of the pipelines can end up with an important increase in the capital cost of the project. The simulation model services the decision makers to determine the range of the cost of each pipeline project and the related risks to identify the confidence level of each alternative project.

Furthermore, as said by Luettinger and Clark (2005), geographic information system (GIS) route selection helps decreasing many possible alternatives to one feasible option. This system relies on both pipelines' construction cost and issues that are not related with cost considerations. The aim of this route selection process is to reduce the effects on residential area and decrease the length of pipelines thus the construction cost. The main considerations when locating pipelines are cost, availability of land and public concern. Other studies, conducted by Balogun et al. (2013) and Yıldırım and Yomralıoğlu (2013) similarly highlights the importance of using GIS in order to guarantee that the route provides the highest benefit by decreasing the negative effects on people and environment. As stated by Balogun et al. (2012), this system is an important tool that increases the reliability and acceptability of the determined pipeline route. Along with this system, humane, environmental and financial factors are also taken into account.

All the articles which are either related with field ownership, political or a transportation conflict directs that, EU needs solve the conflicts in Eastern Mediterranean region and

start with developing a common and detailed strategy paper to overcome any challenges and secondly they should implement these strategies effectively. Garrett & Piccinni (2012) explained it as "This strategy should combine existing policy tools more effectively, while also finding new ways to balance the imperatives of securing access to natural resources and preventing and resolving conflict".

The above studies are the fundamental studies that are highlighting the current problems and situations in the region. As previously mentioned, because this thesis is criticizing the impact of recent discoveries to solve the Cyprus conflict, there is also more literature explaining the positive contributions of the recent natural resource discoveries to the island such as; the economic prosperity, reunion of the island... and so on. The conflict was examined by Korteweg in 2014 on the impacts of natural resources and he stated that "Nicosia wants to export much of its gas to attract foreign capital and alleviate the burden of the €10 billion IMF-EU bailout it received in March 2013. The Cypriots desperately need economic growth: the recession-hit economy is expected to contract by nearly 8% in 2013 and unemployment stands at 20%".

The other possible impact is related with the transportation options. There are some projects for the transportation of the natural gas (LNG terminal in the Island of Cyprus, offshore pipeline to mainland Greece and sub-sea pipeline from Israel to Turkey) which are going to be analysed in detail in the next chapters. For the transportation options Korteweg (2014) also pointed out that Island of Cyprus needs to bring its gas to the market and by doing this it should be the cheapest and shortest pipeline which is from

Island of Cyprus to Turkey. Therefore, in the next chapters; recently emerged natural resources are criticizing as a possible opportunity to solve the Cyprus conflict.

"When making its assessment of Cyprus' gas export options, it must consider the impact on regional stability and the potential to achieve progress towards Cypriot reconciliation. If not, the story of Cypriot natural gas may become another tale of missed opportunities" (Korteweg, 2014). With the aim of understanding the possibility of the coalescence in the island, this study is also supported by the in-depth interview method. The interviews with two sides' elite executives in the state policy have been made and examined their suggestions on the reconciliation. Therefore, it is important to explain the method of in-depth interview.

In the 1970s and 1980s the integration of the qualitative researches has started to use into the clinical researches and generally interviews are the best method to collect qualitative data. (DiCicco-Bloom & Crabtree, 2006). In addition to this, Crouch & McKenzie (2006) explained the interview as: "Interviewing is one of the most frequently employed qualitative methods. Indeed, the term ''qualitative methods'' commonly denotes data collection techniques based on various types of conversations between researchers and respondents". Renzetti and Lee (1993) described the position of in-depth interviews commonly in "sensitive" topics. According to the Boyce and Neale (2006), in-depth interview is a qualitative method that find outs the detailed and real ideas of group or person on a particular idea, program, or situation and when somebody needs detailed information about a person's ideas could use this method. The main of in-depth interview method is to "generate data which give an authentic insight into people's

experiences" (Silverman, 1993). On the other hand, for the DiCicco-Bloom & Crabtree (2006) defined the purpose of in-depth interview method is a tool for the researches that presents a wider perspective and understanding "purpose of the qualitative research interview is to contribute to a body of knowledge that is conceptual and theoretical and is based on the meanings that life experiences hold for the interviewees". Both Bernard (1988) and Fontana & Frey (2005) categorized the qualitative interviews into two parts semi-structured and structured. In this study semi-structured way has been used while making an interview with the elite executers. DiCicco-Bloom & Crabtree (2006) explained semi-structured interviews, which has been used in this study, like the interviews that are well organized and scheduled with open-ended questions before the interview. Boyce and Neale (2006) stated that there is a process for conducting in-depth interviews and the steps are as follow; *Plan, Develop Instruments, Train Data Collectors, Collect Data, Analyze Data, Disseminate Findings* and also there are potential sources of information that are, policy makers, project staff, clinic staff, program participants/clients and community members. While Leydon, et al. (2000) used in-depth interview method "to explore why cancer patients do not want or seek information about their condition beyond that volunteered by their physicians at times during their illness" Julian (2010) is using it "to explore the notion of market orientation in an international context" and for this thesis, the main aim of using in-depth interview method is because of Cyprus conflict is an historical event and this method will support the thesis in the way of collecting real opinions about the conflict and suggestions for the solutions of the conflict.

The questions which have been prepared for the interview are as follows;

1. Could you please introduce yourself?
2. How long have you been acting in your current position?
3. What is the role of energy in your career?
4. What is your role in the energy policy of Cyprus?
5. From your perspective, what would be the impact of decreasing prices of oil in the global economy?
6. What about Cyprus?
7. What is the contemporary energy policy making of Cyprus?
8. As we all know, recently discovered Aphrodite field has emerged as an opportunity for the future of island.

   From your perspective, what would be the impact of this development so called Cyprus conflict?
9. Do you think this natural gas development could be the tool to solve this conflict?
10. What is the role of Israel in this development?
11. Do you think it is possible for Cyprus to be a transit state for Israel gas?

The above questions are prepared for the interview however, as previously mentioned, in the semi-structured interviews there is a dialogue between interviewer and interviewee, and just because of that, the answers are not going to be explained question by question. The reason of preparing these questions is to examine the questions which are occurred while using both conflict management theories by using in-depth method to get more

deep and real answers. The results of the interviews will enhance the quality of this analysis.

CHAPTER 3

IMMEDIATE CHALLENGES IN THE EASTERN MEDITERRENEAN NATURAL GAS DEVELOPMENT

3.1 FIELD OWNERSHIP PROBLEM - NATURAL RESOURCE

The recent natural gas discoveries in the Eastern Mediterranean region present a significant benefit especially for the countries such as Israel, Island of Cyprus[3], Lebanon and Palestinian territories. They also have positive impact on the diversifying energy security however as previously mentioned, there are some disputes in the region and field ownership is one of the important ones. Zhukov (2013) highlighted that, with the recent natural gas exploration on the eastern cousin of the region, Mediterranean is rapidly becoming another example for the resource disputes because of the huge discoveries and accordingly natural competition because of existing compounding maritime borders.

Natural gas discoveries also have strong relationship with -regarding the energy security perspective- transportation options by the disputes over management of offshore resources. It should be determined via negotiation inside the structure of the United Nations Convention on the Law of the Sea (UNCLOS). The Eastern Mediterranean

[3] From now on in order to be an objective and impartial, this study deliberately chooses to use Greek Cypriot (GC) and Turkish Cypriot (TC) to identify them instead of the Republic of Cyprus and Turkish Republic of Northern Cyprus in order to avoid any miscommunications. Island of Cyprus identifies the whole island

region contains some problems as mentioned in the previous chapters that refer to diplomatic recognitions and political problems, loyalty to UNCLOS and agreed maritime boundaries. After this, UNCLOS is a good place to start as a first step. Henderson (2013) pointed the Article 79 and according to the article, route of any oil and gas pipeline which passes through the EEZ of a country needs the approval of the coastal state. However, Scovazzi (2013) underlined another point; there are some traditional rules in the international law for the states that has the maritime borders (adjacent) to their land territory. These rules are implemented to all oceans and seas such as Eastern Mediterranean. Additionally, moving from the coast to seaward, there are different tools to solve the maritime zones subjects which are a) the marine internal waters that are the waters located on the landward side of the baseline from which the territorial sea is measured. The baseline is compared, contingent upon the geological attributes of the coastline, to the low-water line or in specific cases, to one or all the more straight portions that associate some decided focuses placed ashore or islands in the region of the coast and the internal waters are liable to the sway of the waterfront state b) territorial sea is also including the seabed and its subsoil to the sovereignty of the coastal state as the only exception of the privilege of innocent entry or passage for ships flying the banner of third states. The distance cannot exceed 12 nautical miles from the baseline according to the Article 3 of UNCLOS c) contiguous zone is the seaside state which may practice the control that is important to prevent breaches of customs, fiscal, immigration, or sanitary laws. Regulations are available to be applied within its territorial sea. The contiguous zone cannot exceed 24 nautical miles from the territorial sea or baseline d) according to the Article 56 of UNCLOS in the *Exclusive Economic Zone (EEZ).*

Article 57 states that the EEZ cannot exceed the 200 nautical miles from the baseline of the territorial sea e) is the continental shelf that comprises the seabed and subsoil beyond the external limit of the territorial sea as defined in Article 76.

Accordingly, the UNCLOS includes three concepts on maritime delimitations;

a) Territorial Sea (Article 15)

b) EEZ (Article 74)

c) Continental Shelf (Article 83)

Israel is the main actor in the Eastern Mediterranean region as a result of the geographic distribution of the recent discoveries. In 2009 and 2010 after the U.S.-Israeli consortium exploring, Tamar and Leviathan fields has found with approximately 736 bcm natural gas reserve (Offshore, 2013). Egypt was providing Israel's 40% of the natural gas; however, Israel has suffered from the interruption of supply since the beginning of the Arab Spring hence the contract was terminated with Egypt. For of this reason discoveries of Tamar and Leviathan came in an excellent timing for Israel. Zhukov (2013) stated that, "The Tamar and Leviathan fields, once developed, could satisfy Israel’s electricity needs for the next 30 years and even allow it to become a net energy exporter".

One of the disputes realized because of the Lebanon declaration about the share of the Leviathan field that falls into a 330-square-mile territory that both states guarantee as a major aspect of their secured economic zones (Blanford, 2012). According to the Gahlawat et al. (2012) because of this dispute, Israeli was threatened by the Hezbollah to

attack to the Israeli gas platforms which made the Israel a more armed and protected country and caused the approved plan for procuring four new warship and additionally expanding strategy in the political, military and economic cooperation with other stakeholders; likewise, Island of Cyprus.

According to the UN (2014) Cyprus report, in 2010, Israel and GC signed the maritime border agreement; therefore Island of Cyprus became the second important actor in the region. Additionally, Rusila (2013) believes that this agreement would be one option for Israel to transport the gas to European markets. On the other hand, TC claims that their own gas reserves, Aphrodite field, near to Leviathan, bears almost 198 bcm which is enough to meet domestic consumption demand. However, according to Zhukov (2013), "Turkish Republic of Northern Cyprus also claims co-ownership of the island's natural resources"; however, critical point in this situation is, Turkey, which is the possible energy transporter country, does not recognize the GC (Colakoglu, 2013). And finally, in 2007, GC and Lebanon agreed on the maritime boundary and similarly in 2010 GC and Israel did as well.

3.2 POLITICAL PROBLEMS

a. Israel-the Island of Cyprus-Syria

Israel and the Island of Cyprus are likely to become important actors in supplying to Europe's natural gas demand since the two countries are recently giving great importance to guarantee their energy future for the following years. In Israel, the most significant offshore natural gas field discoveries were made after the year 1999 and the natural gas production started in 2004 and has been commonly used by local power

plants. The two greatest field discoveries are Tamar with 283 bcm and Leviathan with 409 bcm of natural gas (EIA, 2013; Bahgat, 2011; Nathanson, 2012). From the Ezrahi (2015) interview with the Tony Blair, who is energy adviser to Quartet Representative, Blair believes that the extraction of the natural reserves is not sufficient enough alone for Israel to export to the EU. On the other hand GC also made offshore discoveries of fields and the area that holds gas reserves is estimated to contain 140 to 225 bcm of natural gas and the most important field for the Island of Cyprus is Aphrodite with reserves of 198 bcm of gas (EIA, 2013). Similar to Israel, the Island of Cyprus is also an energy importer, namely all of the fossil fuels are being imported by the island. Taliotis & Howells (2012) stated that, the cooperation in terms of energy between Israel and the Island of Cyprus has begun with the declaration of the advancement of an undersea electricity cable which will connect Israel to the Island of Cyprus and then Greece. This project is proposed to supply cheap and sufficient electricity to South-Eastern and Western Europe. Moreover, there is a project of building an LNG production plant in the south coast of the Island of Cyprus in which both countries can liquefy their own gas and then export it. The electricity cable project is to be realized as LNG is expensive and pipelines are politically infeasible and economically impracticable. This cable will transport the electricity from the Israel to Island of Cyprus and via Greece will be linked to the pan-European electricity grid (Askja Energy Report, 2013). However, according to Gürel, et al. (2013) there are some disadvantages of this project and the main disadvantage is, its heavy reliance on unsteady Greece (both political & economical instability) and in the end the revenue from this project would be far less than the revenue from a pipeline or LNG.

The Israeli and GC governments signed an agreement in Nicosia on December 17, 2010 which was about the demarcation of their own EEZs, but in the meantime, according to the Republic of Turkey Ministry of Foreign Affairs (2010), Turkey declared that 2010 agreement between Israel and Nicosia is null and void. Starting from this date, two countries had held meetings with regard to cooperation in terms of energy security and natural gas. Antreasyan (2013) stated that, in 2012, Israel, Greece and the GC made an agreement on establishing working groups to focus on an 'Eastern Mediterranean Energy Corridor' to export Israeli and Cypriot gas to Europe via Greece. Additionally the option of building an LNG plant was also being discussed between Israel and the Island of Cyprus.

Azoulay (2012) claimed that, the energy and security agreements between Israel and the Island of Cyprus enable Israel to use GC air space and territorial waters in case of search and rescue missions. At the time, Gordon (2011) believed that Israel is considering the possibility of using GC airfields in case of an escalation with Iran and also Israel has granted security assurance to the GC and might cooperate in protecting the Cypriot gas fields. On the other hand, the electric power line project between Israel and the Island of Cyprus will contribute to increased energy security for both countries because they currently do not export or import any power and the plan also suits to EU's plan of obtaining an interconnected energy market. According to the Nathanson & Levy (2012) an early agreement of the EurAsia Interconnector project that was signed in 2012 was the first step for the longest undersea power line in the world. The two parts are cooperating for strategic and economic reasons that are while the relation with Turkey is deteriorated, Israel tries to form a regional cooperation between Island of Cyprus,

Greece Bulgaria and Russia. Besides, in order to increase the earnings from natural gas, the Island of Cyprus and Israel recognized that it will only happen if they cooperate with each other.

Conventionally, Haritos (2013) pointed that the GC foreign policy and public opinions have supported the Arab parties to the Arab-Israeli disputes but within recent years, the GC government has been adopting a pro-Israeli foreign policy such that the president of GC then, stated that establishing firm relations with Israel on mutual oil and natural gas exploitation projects in the south part of the Eastern Mediterranean region was the best political progress. Consequently in 2013, the GC government made an agreement that gives Israeli companies 30% of exploitation and exploration rights in the EEZ of the Island of Cyprus. On the other hand, Gürel & Le Cornu (2013) underlined that, Syria owns the greatest proven reserves of oil in the Eastern Mediterranean region but the conflict in Syria holds back the willingness of the international companies to operate in the country and most of the oil companies left Syria due to the sanctions applied on the country by the US and Europe. According to the BP (2015) data Syria has approximately 300 bcm of natural gas reserves. With the recent discoveries, Syria also aimed to explore offshore gas reserves for itself but according to the EIA (2013) Syria report, because of the ongoing conflicts in the Syria, the exploration in the country has been postponed open-endedly. On the other hand, any plan that could include using Syria as a transit country in the region had been suspended due to the unrest in the country (EIA, 2013).

b. Turkey-Israel-Palestinian Territories

The political relations between Israel and Turkey have been strained for the past few years. After being elected, then Turkish Prime Minister Recep Tayyip Erdoğan -now president- paid an official visit to Israel and Palestine in May 2005. At that time, the relations remained good: Cohen & Freilich (2014) believed that, for years, Turkey and Israel shared almost the same vision of the political situation in the Middle East (disapproval of Iran's nuclear ambitions, willingness to appease the situation between Israel and Syria) and conducted; as a result, military exercises together. 2008 was the turning point of these peaceful relationships. As it also explained in Daily Sabah (2014) Turkey has always stood by for the Palestinian's right for independence; its aid has been a really important source of humanitarian support to Palestinian territories, especially since the start of the blockade of the Gaza Strip. Inbar (2010) also emphasized that Turkey would also like the State of Palestine to be recognized as a state in international meetings, and s/he actively supported the State of Palestine in her wish to become a member of UNESCO in 2011. Moreover, Turkey sees that with the help given to the Palestinian territories, a way to increase their soft power in the region. As a result, the 2008-2009 Gaza war between Palestine and Israel and their bad relations in general have tensed the dialogue between the latter and Turkey. According to the Robinson & Butler (2012), Throughout Turkey, several demonstrations against Israel's behaviour were held and the Turkish government itself described it as "state-sponsored terrorism". Turkey stopped both military exercises and being the mediator between Israel and Syria. The 2010 Gaza flotilla raid has definitely buried all positive contacts between the two nations.

On May 31, 2010 nine Turkish activists from a humanitarian aid flotilla sent to Gaza (the "Mavi Marmara") were killed by Israeli troops while they were in international waters. (Sherwood, 2010). According to the Palmet (2011), this incident led to a serious diplomatic crisis: the Turkish Ambassador of Tel-Aviv was directly recalled and Turkey summoned Israel Ambassador to give explanations. The relations between the two countries were severely downgraded and Turkey asked for apologies and financial compensations for the families, Israel refused both. After that, relations didn't recovered well: Turkish Prime minister Erdoğan tough that that was a crime, even going so far as described Zionism as "a crime against humanity". The long-awaited apologies from Israel's Prime Minister Benjamin Netanyahu in 2013 opened the way for reconciliation (Aras, 2013) but the scandal over Turkish participation in exposure of Israeli agents in Iran in October 2013 got the two countries "back on the warpath" (Ignatius, 2013).

Nonetheless, everybody agrees that peaceful diplomatic relations can still reappear. There were several efforts for normalizing the relationship between Turkey and Israel. One of them is US President Barack Obama's initiation to Prime Minister of Israel Binyamin Netanyahu. In March 2013, while Obama visiting the Israel, Netanyahu apologized for the "Mavi Marmara" from the Turkish President Recep Tayyip Erdoğan on the phone (Sheva, 2015). The latest meeting between Israel and Turkey in Rome is a big step and example for this peaceful diplomatic relations. According to the daily Haaretz reported in June 22, 2015, "After over a year of deep freeze in Israeli-Turkish ties, talks about a reconciliation agreement between the two nations have resumed with a secret meeting between Foreign Minister Director General Dore Gold and his Turkish counterpart, -Turkish Foreign Ministry Undersecretary- Feridun Sinirlioğlu". After this

meeting Gold announced that, they are measuring the possibility of resolving the crisis between the two countries (Eichner, 2015).

Indeed, Israel and Turkey have excellent foundations on which they can rely: Turkey was the first Muslim majority country to recognize the State of Israel, they still have the same vision on many political issues in the Middle East (The New York Times even said, back in 1999, that together they have the ability to change the whole politic situation of the region) and moreover, they kept their ever-increasing business relations. Ravid (2014) explained that, very recently (end of March 2015), serious rumours in numerous newspapers said that the two nations are finally about to reopen their embassies: the Turkish foreign minister stated "the gap between Turkey and Israel is closing".

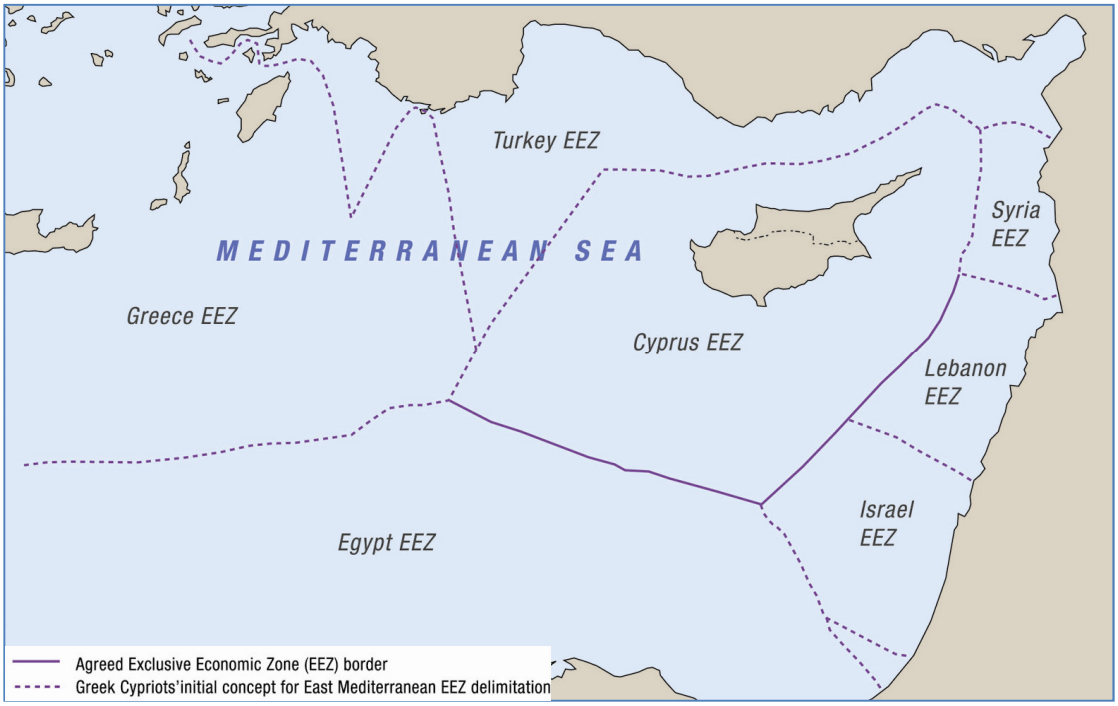
c. Island of Cyprus-Turkey-Greece

The official dispute between Island of Cyprus-Turkey and Greece has started in 1974, because of the junta and enosis (political union) in Greece and GC, Turkey intervened to the Island of Cyprus which caused lasting disputes between GC and TC. The conflict between two parties separated the Island of Cyprus as TC and GC since 36% of Northern territory belongs to TC administration, 62% of Southern territory is controlled by GC and the rest of Island of Cyprus is under the authority of UN Buffer Zone (Gürel& Özersoy, 2006). TC is only recognized by Turkey, after the declaration of its sovereignty as a separate state from GC in 1983. Gürel & Le Cornu (2013) explained that, the GC assumes that northern part of the Island of Cyprus was invaded as illegitimate action by Turkey. Until that time, Island of Cyprus issue was a dispute

between Greece and Turkey which cannot be solved yet, although UN promoted agreement and try to solve the problem between two Cypriot parties.

Territorial dispute is the biggest lasting political problem between TC and GC as emphasized above in detail. In addition to Turkish and Greek Cypriot disputes, Greece and Turkey territorial problem has been continuing for years in the Aegean region. Continental shelf and maritime disputes are some of the problems because of the separation of island and suggesting different solution of the parties in the Aegean region. Based on the Turkish government attitude and declarations, Turkey supports that dispute can be solved via negotiation, but Greece sustains that legal subject should answer by judicial solution. The rivalry between Greek and Turkish Cypriot on territorial issues also impacts continental shelf and EEZ to determine borders in the Mediterranean Sea.

Figure 1: Exclusive Economic Zone Borders



Source: Republic of Cyprus Officials, 2012

According to United Nations Convention on Laws of the Sea (UNCLOS), continental shelf is located 12 nautical miles (22 kilometres) from territory of state that seems as an extension of territory. Moreover, EEZ recognizes 200 nautical miles (370 kilometres) from territorial border. According to Prof. Tzimitras (2013), EEZ provides the countries fishing rights, exclusive jurisdiction for the protection of the marine environment and rights over the superjacent airspace, used for offshore turbines rather than continental shelf regime. In other words, EEZ is not necessary to solve offshore hydrocarbons issue of natural gas and oil in the continental shelf of the Island of Cyprus. After the discovery of the offshore natural gas and oil reserves of the Island of Cyprus, the continental shelf has provided exploitation rights and exclusive exploration of littoral states if the other coastal states do not claim it. Nathanson & Levy (2012) believed that, GC has started the

exploration and extraction of natural gas in recent years, after that point the disputes between littoral countries came up because of the political and legal reasons. The GC has benefited from hydrocarbon exploration with Aphrodite gas fields in its continental shelf which caused disputes between Turkish and Greek Cypriot.

Turkish and Greek Cypriots have different positions and views about the solution of the maritime and continental disputes in the Mediterranean Sea. According to the Embassy of the Republic of Cyprus in Cairo report[4], from the GC point of view, it has been accepted that an international community is the legitimate government of the Island of Cyprus which includes both Turkish and Greek Cypriot parts, and GC speech and action is coherent with the decision of an international commission. After a settlement, GC accepts that TC has also rights over the offshore natural resources. However, it is only usage and sharing of the revenues of that, it cannot explore or extract the offshore hydrocarbon fields that depend on internationally recognized TC, also, the extraction and exploration right of the TC is not an assignable and negotiable subject. Demiryol (2015) stated that, GC claims that they have sole sovereign right for the profit from revenue and usage right of natural gas resource that belongs to Island of Cyprus and extraction and exploration right belongs to the GC. In other respect, TC supports that the Island of Cyprus cannot be seen alone as a single authority. Because according to the Gürel & Le Cornu (2013), it is contrary to 1959-60 Island of Cyprus Accords and

[4] Embassy of the Republic of Cyprus in Cairo. 2015. Cyprus Questions. Republic of Cyprus. (Availableat: http://www.mfa.gov.cy/mfa/Embassies/Embassy_Cairo.nsf/DMLcyquest_en/DMLcyquest_en?Opendocument&print)

Constitution which included Turkish and Greek Cypriot together in itself as a bi-communal power sharing in the island. Yabancı (2014) believed that, TC part desires to wait the hydrocarbon issues until political settlement is recognized as a bi-communal federal authority. TC is also a part and owner of the island, and it should benefit from exploration and extraction point from offshore resources. TC proposes that both sides should delay their unilateral operation and should bring together their authorities for sharing revenue even if the Island of Cyprus problem is not solved between two parties. TC invites GC and international community to accept as equal sharing right with GC concerning extraction and exploration right of offshore natural gas fields and maritime jurisdiction. To conclude that, bi-communal technical community which includes both Greek and TC authorities, should determine both sides equal sharing of revenue and handle of the total revenue of hydrocarbon with the mutual consent of both parties (Gürel, et al., 2013).

In the Eastern Mediterranean Region, Greece and Turkey have a continental shelf and EEZ disputes same as in the Aegean Region. Turkish government has doubts about exploration and exploitation hydrocarbons in the region. Because of the unilateral exploration action of GC, Turkish government does not recognize its action as the Island of Cyprus. According to the Euronews (2015), Turkish and Greek Cypriot should act together to explore and extract Island of Cyprus' hydrocarbon fields that have equal rights and concern in nautical zone of the Island of Cyprus. However, GC acts and decides alone about hydrocarbon issues without the consent of TC. It creates faiths accomplish to the TC that is incoherent with the UN negotiation support to solve the Island of Cyprus issue. Continental shelf and EEZ delimitation agreement between the

Island of Cyprus, Egypt, Israel and Lebanon is not accepted by Turkey because GC signed the agreement alone, ignoring TC's equal right with GC. Because of the continuous of exploration action of GC, Turkey and TC signed continental shelf delimitation agreement to answer these exploration and extraction actions as reciprocal steps that signed in terms of Turkish continental shelf claim (Gürel, et al., 2013). However, Greece do not accept Turkish continental shelf claim, it determines its own continental shelf and EEZ borders that are published by a couple of international foundations (Siousiouras & Chrysochou, 2014). According to the Yaycı (2012), Greece's aim is to do delimitation of coastal power with regard to Crete, Kashot, Kerpe, Rhodes and Meis line. Additionally, Greece try to exclude Turkey from Eastern Mediterranean region with acceptance of that line as coast, so, they leave to Turkey continental shelf and EEZ areas that is limited with the gulf of Antalya. However, that attitude cannot agree with international law which bears the principle of supremacy of geography and proportionality. It means that coastal length ratio between two states and ratio of continental shelf or EEZ that is given to these countries should be close to each other. Under these circumstances, as the location of islands of Greece is located opposite side of the middle line between Turkish and Greece mainland, these islands cannot own EEZ right in that area. This is because of the fact that close proximity of islands to mainland of Turkey hinders laws to give permission to own EEZ of islands in the Mediterranean Sea. To sum up, Turkey suggests that EEZ claim of GC and Greece claim over the islands' EEZ is overlapping Turkish continental shelf in the Mediterranean Sea.

3.3 TRANSPORTATION OF NATURAL GAS (PIPELINE - LNG)

a. LNG Terminal in Island of Cyprus

In the southern coast of the Island of Cyprus at Vasilikos, an LNG plant is planned to be built until the Aphrodite field is completely explored (MIT Energy Initiative, 2013). Henderson (2013) believed that, currently the estimated proven reserve is sufficient to operate a one-train LNG plant. The capacity of this plant could further be expanded either if Aphrodite field happens to contain more reserves, additional fields are explored or Israel could pipe gas from its EEZ to Island of Cyprus. Shalom (2014) explained that, currently there is a pipeline plan from the Cypriot Aphrodite to Island of Cyprus and also, Israel made an offer to connect a line into this planned pipeline. If the combination of Leviathan and Aphrodite gas fields occurs, then the capacity of the LNG plant will be enlarged from one train to more. On the other hand, Henderson (2013) believed that, with the help of the increase in the amount of gas, the costs of the LNG trains decline due to the economies of scale. This project would be able to send natural gas to both European and Asian markets. The feasibility of this project depends on the amount of gas that would be supplied to the facility.

The joint Israeli-Cypriot LNG plant will carry gas from the offshore fields Aphrodite and Leviathan to the liquefaction plant and then the gas will be transported to Greece for re-gasification process. This project is being supported by the GC government and Noble Energy (Tagliapietra, 2013).

There are several advantages of the LNG project for both Israel and Cyprus. Sefcovic (2014) underlined that, existence of several LNG re-gasification terminals in the

Mediterranean which would allow the Israeli and Cypriot gas to enter the European markets. Thus the gas export would not be limited to certain countries. On the other hand, Tagliapietra (2013) explained the avoidance of counter opinions towards a local LNG plant in Israel with the construction of an LNG terminal in the Island of Cyprus. It is not approved for Turkey to lean towards energy cooperation between Israel, the Island of Cyprus and Greece. This new alliance in the region is against Turkey's foreign and energy policy intentions of becoming a natural gas hub in its region. The global approaches towards the projects in the Eastern Mediterranean region are rather different. According to the European Commission report (2015) on the import and secure supplies, it has been explained that EU aims to involve the region's gas into its energy mix in order to supply the high demand of the region without being too much dependent on its main suppliers that are Russia, Norway and Algeria.

The Island of Cyprus LNG project will consist of subsea production wells, a deep water host for the process of natural gas and treat the liquids and a sub-sea pipeline to deliver the treated natural gas to the coast. The details of the project are explained by Peereboom (2013) like: the location of the project at Vasilikos is owned by the government and the feasibility reports state that as a minimum of three 5 million tons per annum (Mtpa) liquefaction trains can be constructed within the area. Additionally to the sale of gas into European market, this project will also offer alternative for the Asian market to create supply diversity since the plant will be positioned near the Suez Canal.

There are both many advantages and disadvantages of this LNG project for the countries. Gürel, et al. (2013) first listed advantages as; it is easy to export the gas via

vessels to every part of the world. Secondly, it is less exposed to terrorist attacks than a pipeline and finally, LNG provides decreased cost of transportation since it carries more gas in 600 smaller volume than the original volume of natural gas. On the other hand it also creates problems such as high investment and operation costs, long construction time, and energy intensiveness of LNG shipments. In the case of Cypriot LNG plant project, the total investment cost is calculated to be $12,600 million which includes exploration, pipeline and construction costs. According to the Chishios (2012), the GC Energy Regulatory Authority had stated that among the proven reserves, 25 bcm of gas will be used for domestic consumption so that 173 bcm of gas will be offered to export. Additionally, in the case of LNG, the available export amount will be decreased to 152 bcm due to the high energy requirement to operate the plant. In the current situation, there is no certainty that Israel will join to the LNG project, which puts the project into an unclear position because without sufficient investment and gas from the Island of Cyprus fields, the financiers would want to wait for more years until the gas amount is enough which would result the revenue flow to start at the earliest in 2027.

b. Offshore pipeline to Mainland Greece

In order the Aphrodite and Leviathan natural gas to reach Europe, the second option is construction of 26 inch that is occurred from three sections thorough Crete and Greece. One is a pipeline from fields to the Island of Cyprus, second is a connecting pipeline from the Island of Cyprus to Crete, then pipeline from Crete to mainland Greece that has two options to reach Europe from Crete islands. These options are examined by the Manolis & Loverdos (2013) and acordingly, the first option is 1700 km pipeline that is 1200 km offshore and 500 km onshore to Greek Adriatic mainland coast, and connects

to Italy with via Interconnector Turkey-Greece-Italy (ITGI) pipeline that has 10 bcm pipeline capacities with 210 km length. The second option is 1550 km offshore and 20 km onshore pipeline to reach northern Greece with the connection to Bulgaria via Interconnector Greece Bulgaria pipeline that has 5 bcm capacities and 180 km length. On the other hand, Pelaghias (2012) explained the underwater or offshore pipeline from the Island of Cyprus to Greece which is called Eastern Mediterranean pipeline that bypass ITGI project which provides to reach Shah Deniz natural gas to Greece and Italy. Therefore, by Eastern Mediterranean pipeline, Greece can bypass Turkey to bring natural gas with the connection of Trans Adriatic Pipeline to southern region of Europe. Additionally if the Eastern Mediterranean project is realized via Greece offshore pipeline, natural gas of the Island of Cyprus could be exported to Turkey via southern corridor, but that option create bad impact with Turkey and the Island of Cyprus relation which is a hopeless case to initiate good relations between two parties. The Eastern Mediterranean pipeline which will be the longest and deepest pipeline in the world that will pass the Turkish continental shelf claim area. This situation will make it difficult to realize the pipeline project through Crete and Greece line. According to Article 79 of UNCLOS, a state has the right to build offshore pipeline or cable on the continental shelf of another state, if that state has consent and permission to lay pipeline on its continental shelf. However, Turkey has not a consent to lay pipeline its continental shelf, because Greece claim right over that continental shelf area and Turkey desire to pass that Eastern Mediterranean Project over its territory via Israel-Turkey offshore pipeline which will explain below as a third project (Nathanson & Levy, 2012). As it known, Manolis & Loverdos (2013) also explained that EU has the energy criteria to provide security of supply that is realized to be available via that pipeline project by

diversification of routes and sources to carry natural gas to Europe. Carrying natural gas via EU member countries shall serve as a decrease in the risk of supply security which is an advantage for Europe. Also, Greece has big advantage from that pipeline project, both for economic gain and knowledge of energy technology. Greek government emphasizes that geological similarities of Crete and area between Israel and Island of Cyprus estimates possible natural gas field in offshore Greece. If Greece can take EEZ extraction permission on south of Crete offshore, it will be the transit hub by carrying natural gas of the Island of Cyprus, Israel and itself to Europe. However, Tagliapietra (2013) also pointed that, like every pipeline project, that project has also a cost of $25 million per km and the estimated capital cost is around $20 billion for the pipeline from the Island of Cyprus to Crete.

Building of the deepest and longest pipeline needs large amount of investment and capital expenditure. The water depth between the Island of Cyprus and Greece reaches 2000 meters, also the depth between natural gas fields and Vassilikos is twice deeper. The long distance and water depth causes to increase the investment cost. Distance of submarine pipeline from natural gas fields to Vassilikos is about 200 km. Based on the general information about the project from the Kallika (2014) the cost of submarine pipeline per 100 km is $1 billion, if its depth is higher than 1000 meters. The total cost of submarine pipeline from natural gas fields to Vassilikos is $2 billion. According to the Natural Gas Europe data (2012), the distance between the Island of Cyprus and Crete is about 1.100 km. Therefore, the total investment cost of offshore pipeline between the Island of Cyprus and Crete is $15.5 million fields and after the adding the exploration cost that is $600 million and cost of onshore pipeline of Greece that is $1.34 billion, the

total investment cost of pipeline to Greece is about $19.51 billion. If the Eastern Mediterranean natural gas can be transported via EastMed pipeline, the net revenue will become about $55 billion (Gürel, et al., 2013). The pipeline from the Island of Cyprus to mainland Greece will be the longest pipeline which desires an extremely huge quantity of natural gas. If all natural gas of the Island of Cyprus in the Aphrodite fields is used to deliver natural gas with full capacity via that pipeline, it would be sufficient to maintain pipeline operation for 20 years. However in order to provide security of supply, a much more amount of natural gas is needed from Israel fields. Therefore, it has been thinking that, the amount of natural gas in Aphrodite field would not be enough to export Eastern Mediterranean natural gas, and they try to incorporate with Israel to export its natural gas to Europe that is located in Leviathan fields (DeMicco, 2014; Vukmanovic & Bousso, 2014; Demiryol, 2015).

c. Sub-sea pipeline from Israel to Turkey

The project analyzed by Bryza (2014) with an estimated cost of between $2 to 3 billion, collects favours of the American Noble Energy and the Israeli Delek, principal holders of rights to use the Tamar and Leviathan fields, as well as several Turkish companies, such as Turcas, wishing to import and distribute Israeli gas to Turkish consumers. As stated above, the relations are quite strained between Tel Aviv and Ankara since the incident of the Gaza Flotilla in 2010, however, they could appease and the economic relations has remained good and they are strengthening[5]. The problem is actually more with the Island of Cyprus than with Israel. Actually such a pipeline would pass through

[5] RT. Question More. 2013. ICC opens initial probe into Israel's deadly 2010 Gaza flotilla raid. (Available on http://rt.com/news/israel-raid-icc-gaza-276/)

the Island of Cyprus EEZ with which Turkey as some trouble for 40 years. Theoretically, in the United Nations (1982) report is has described that, under Article 58 of the UN Convention on the Law of the Sea, every country has the freedom to install cables and submarine pipelines, but in reality, implementing such a project without the permission of the Cypriot government would be virtually inconceivable.

The pipeline to Turkey is actually a relatively simple project: it is cost efficient (way cheaper than the other alternatives) and does not require special approvals (even to go through the Island of Island of Cyprus EEZ, see above). It would consist of two 24-inches pipes, from the Leviathan gas field to the Ceyhan port (approx. 600km), each pumping 8 bcm, i.e. 16 bcm in total and apparently (Barkat, 2013; Bryza, 2014). With this pipeline, Turkey may be a gateway to Europe, but it is not so sure. Indeed, according to Eliamep (Hellenic Foundation for European & Foreign Policy, 2013) report the transit capacity available for the Turkish National Gas Transmission System (NGTS) and TANAP is not big enough (at least not more than 5 bcm/year) to make it possible. Nonetheless, the Turkish market itself may absorb all the quantities of gas that Israel can provide: there is a growing market in the fast rate of 3% that already currently consumes 50 billion cubic meters of gas per year. EIA (2013) has reported, the natural gas supplier via pipeline as; Russia (56%), Iran (18%) and Azerbaijan (8%), and via LNG as; Algeria and Qatar in the form of liquefied gas (16%). All sources, except for Russia, sell gas to Turkey at a much higher price than Israel could offer. And yet, even the Israeli prices seem to be very profitable. Israeli sources estimate that the payback period of investment in the Turkish project would be of two years, which lower the risks in the event of a crisis between Israel and Turkey (Barkat, 2013; Bryza, 2014).

Concerning the other countries involved in this project, the U.S. is backing its firm, Noble Energy, and thus is a strong sponsor of this Israeli-Turkish pipeline. Also, in their desire to bring the countries of the area closer and to pacify the relations in the Middle East, they are seeing in this project a possible route towards the Israel-Turkey reconciliation that matters a lot to them. Indeed, Barkat (2013) believes that they both are among the most powerful countries and the biggest allies of the U.S in the region. What are then the political risks? First: the Russian problem. As previously said, Russia is currently the biggest gas supplier of Turkey (58%), they are thus willing to defend their interests, by backing their firm, Gazprom, both on the Turkish and European market. In fact, this pipeline could possibly be a first step to enter the European market then, even though nothing is less sure.

CHAPTER 4

THE HISTORY OF CYPRUS CONFLICT: BACKGROUND AND CURRENT SITUATION

Mainly the importance of Island of Cyprus is because of its geopolitical position which is dominating the Eastern Mediterranean trade routes (Çevikel, 2000). It is important to understand the Island of Cyprus conflict within a historical process. According to the Uçarol (1978), Island of Cyprus fell under the hegemony of many different regional powers; from the Hittites to Egyptians, Assyrians to Arabs... use and so on. and had immigrants from the Eastern and Western Roman Empire which means that the island is composed of a very complicated and complex social structure. However, Ottoman Empire conquered Island of Cyprus in 1571. Island of Cyprus was under the rule of Turks for 307 years which is the longest uninterrupted period of time. Hakeri (1993) highlighted that, after the conquest of the region, Ottoman Empire did not behave hostilely to the indigenous people and the people of island met the Turks as a saviour because of reaching a peaceful environment. Ottoman Empire provided the broader powers to Church, built an empire based on justice and equality scheme; moreover, administrative, military, financial and legal institutions were created in that period and the waterways, inns, bridges, mosques, fountains, new roads and castles were built (Özarslan, 2007). With the period of stagnation and regression, Ottoman Empire started to lose its power in general and accordingly the established order/system in Island of Cyprus also started to get corrupted. According to the Uçarol (1978) these changes

caused some insurrection against the state, especially Mora insurrection in 1821 caused the disruption of peace in the island and it was because of the Greek bourgeoisie and the church. At that time, the power of Church was increasing and they had a great power and authority over people. The first important case against the Turkish rule started with the incitement of the Cyprus Orthodox Church against the government with the aim of realizing the "Great Idea". It caused the greatest damage to the Ottoman management. In addition to this, the government recognized the right to the Christians who were left in Island of Cyprus, to pass to the Greek nationality. Ottoman and Russian war began in 1877 and Ottoman Empire lost the war. Vatansever (2012) explained that against the Russian threat, Ottoman Empire made a secret defense treaty with the United Kingdom in 1878 which temporarily assigned Island of Cyprus to the United Kingdom and according to this agreement, the island leased to the United Kingdom for 92.000 gold annually and in case of withdrawal of Russia from Kars, Ardahan and Batum, the island was going to be given back to the Ottoman Empire. However, after the assignment of Island of Cyprus to the United Kingdom by Ottoman Empire, the most specific factor that determined the relationship between TC and GC was "Enosis" demands and according to the Yellice (2012) for this purpose Greece established committees.

After the Zurich and London agreements in 1959, the Republic of Cyprus was established in 1960 (Turgut, 2008). Gazioglu (2012) believed that, the Cyprus conflict had been solved by 1960 agreement but only temporarily; however, the Greeks were fully determined for creating problems on the application of the constitution. With this aim Makarios, who is the GC leader seen the Republic of Cyprus as a step on the road to Enosis and began to work in this direction by changing the Treaty of Guarantee in 1960.

Unfortunately these provocations become effective in a short time. Because of that, Greeks were warned against the constitutional violations by Turkey. Denker (2001) stated that: "1960 agreement was rejected by the Makarios and he requested to change 13 articles of the agreement. It was a pretext of the real aim which was to achieve the Enosis by disabling the Turkish side". And after this explanation, Duran (2008) explained that, from 1963 EOKA has started various attacks to the TC which are called Bloody Christmas and after all these; Turkey intervened in the island in 1974 in order to protect the rights of Turks who were living in Island of Cyprus. Nicosia was divided into two in order to ensure security by "Green Line" (BBC, 2015). This line is the line which is dividing the Nicosia, separating the Turkish and Greek parts of Nicosia and actually this line is the starting point for the separation of the island.

4.1 Analysis of Annan Plan

After the separation of the island, United Nations started the search for a common ground for the both sides; there were some suggestions from the Secretary-General of the United Nations. Sozen & Ozersay (2007) believed that, despite Annan's plan, which was the most comprehensive plan so far, it was not an ideal plan for either sides. Duran (2008) summarized the Annan Plan as; GC and TC would be politically equal and there would be a bi-zonal, independent, and united Island of Cyprus. The country would be depending on both International Law and United Nations objectives. GC state and the TC state would be the *United Republic of Cyprus* in a federal structure. The official language will be both Turkish and Greek. While plan was rejected 76% by GC, TC accepted it with 65%.

4.2 Latest Developments in the Cyprus Conflict

In 2008, Talat and Hristofyas, came together to discuss the current phase of Island of Cyprus problem and after that conversation, the Gate of Lokmacı has opened for both sides and on Mrch, 21 the process has begun according to the Stylianou (2010). According to the Security Council Report (2008), as the joint declaration after the conference, it was indicated that two leaders are likeminded about having a federal government which would be based on political equality, bi-zonal, the commitment to bi-community federation reconfirmed and has a single international identity which is composed by Turkish and Greek equal status constituent states. While all parties were trying to resolve the Island of Cyprus problem, GC came up with new agreements to fully conquer East Mediterranean. Thus, this also brought the problems around the EEZ and hydrocarbon research. GC signed three agreements regarding EEZ. The first one was on February 17, 2010 with Egypt and the second one on January 17, 2007 with Lebanon and finally with Israel on December 17, 2010 regarding limitation of EEZ; with that said it became possible for petroleum and natural gas search in open sea, right after GC started the hydrocarbon researches on September 19, 2011. In return, TC signed a counter agreement with Turkey which allows petroleum and gas researches beyond 12 nautical miles of continental shelf and sent the seismic data ship Barbaros Hayrettin Pasa which was searching the hydrocarbons in international waters off the coast of GC Daloglu, 2014; Hurriyet Daily News, 2014). In addition to this Daloglu (2014) also stated that "The Greek Cypriot Defense Minister Christoforos Fokaides claimed that Barbaros and two additional vessels entered the EEZ of GC and pronounced the situation to be a violation of all international and European maritime laws, undermining security and stability in the region". In response to this, Cyprusscene (2014) reported the

statement of the Turkish Prime Minister Ahmet Davutoglu which is, Turkey is not going to retract Barbaros Hayrettin Pasa which sounds a new possible dispute.

Recently, there are positive meetings between Presidents of both GC Nicos Anastasiades and TC Mustafa Akıncı. According to the Guardian (2015), "It has taken more than 40 years, an army of mediators and several near-misses, but there is genuine hope that when the leaders of ethnically divided Cyprusresume peace talks on Friday, one of the west's longest-running diplomatic disputes can finally be resolved". In addition to this, after the meeting, Akıncı tweeted that "Tonight we came together with Mr. @AnastasiadesCY, it was a positive meeting, it was a good beginning"[6]. On the other hand, according to the Aljazeera (2015) Anastasiades stated that "With my election there is hope".

4.3 Role of Guarantor Countries: United Kingdom, Turkey, Greece and European Union

4.3.1 The Role of United Kingdom

The history of the Cyprus, from the perspective of United Kingdom was explained in the report which published by Atilim University (2013) as follows; during the 1878 war between Ottoman Empire and Russia, the United Kingdom rented the Island of Cyprus from the Ottoman Empire under the aim of "help against the Russians" but this was a temporary. When the war was over, United Kingdom would give Island of Cyprus back. However, after the Ottoman Empire's decision on the WW1, staying next to Germany, United Kingdom used this situation as an opportunity and declared that they annexed Island of Cyprus and stopped to pay 92.000 gold yearly. On July 19, 1923 based on

[6] From Mr. Mustafa Akıncı twitter account. Availabe at: https://twitter.com/mustafaakinci_1

Article 20 of the Treaty of Lausanne, island was legally left to the United Kingdom[7]. However, Çeliktaş (2013) stated that, after the decision of Greek parliament on the annexation of Island of Cyprus to Greece, there started the conflict between both Northern and Southern parts of Cyprus, Greece and Turkey. Therefore, United Kingdom undertook the role of guarantor country.

Nowadays, there are a lot of suggestions for the role of United Kingdom as guarantor country of Island of Cyprus should use the guarantor power to achieve the political leverage authority over the EU states in GC affairs. However, recent historical situations should also be included. Within this context, Karpazli (2014) explained the current role and behaviour of United Kingdom after the hydrocarbon discovery in the region with the declaration of British Minister for Europe David Lidington of the Britain's recognition of the GC government's right to exploit the new natural gas reserves within its EEZ. On the other hand, according to the World Bulletin (2014), Jack Straw, who is Former British Foreign Secretary, claimed that the only solution is the acceptance of the division in Island of Cyprus by the international community.

After the official visit of U.K. Prime Minister David Cameron, Ahmet Davutoglu, who is the counterpart of David Cameron in Turkey, reiterated that they have common stance on the resumption of Cyprus peace talks as two guarantors and Karpazli (2014) also expressed that "As much as Britain's siding with the EU on Turkey's behaviour was done to serve Britain's best interests, as a guarantor of Island of Cyprus, Britain has a

[7] Atılım Üniversitesi Kıbrıs Araştırmaları ve Uygulama Merkezi (AKAUM), 2013. *Dünden Bugüne Kıbrıs Tarihi ve Kıbrıs Sorunu - I.* (Available at http://akaum.atilim.edu.tr/pdfs/KibrisTarihiveKibrisSorunu_I.pdf).

responsibility to play a more direct role in encouraging the GC to recognize Turkey's right to demand involvement in deals over the island's offshore hydrocarbon reserves".

4.3.2 The Role of Turkey

In the history, the aim of Turkey on Island of Cyprus has always been to defend the legal rights of TC's as it was explained in the previous chapters. It is also important to understand the role of Turkey after the discovery of offshore gas in the region.

In 2003, there was a maritime boundary agreement between GC and Egypt as mentioned. In 2004, United Nations Secretary delivered a note from Turkey which was declaring that Turkey is not reorganizing the agreement between GC and Egypt and reserves[8]. According to the Henderson (2013), Turkey claims a right to an EEZ border with Egypt; moreover, Turkey does not recognize the right of GC on the EEZ beyond 12 nautical miles to the west of the island, the real reason behind it is Turkey's sensitivity for the Greek claims on the rights of the island in the Aegean Sea.

In 1983, "Turkish Republic of Northern Cyprus" (TRNC) was declared for the northern part of the island of Cyprus and it is recognized only by Turkey. Scovazzi (2012) states that "In recent times, Turkey has challenged the legitimacy of maritime delimitation agreements concluded by Island of Cyprus, stating that GC do not represent the island as a whole and are not entitled to conclude such agreements". According to the Havadis Gazetesi (2014) Harry Tzimitras underlined that Island of Cyprus should be considered

[8] Maritime Borders and Main Gas Fields in the Levant Basin. 2012. (Available at: http://www.iemed.org/observatori-en/recursos/documents/mapes/arxius-mapes-anuari-med.2012/Map_A17_en.pdf-en)

as an island, that's why Nathanson (2012) claims that, it could not have any rights beyond its 12 nautical mile territorial limit according to the EEZ. Thus the benefits from any resources discovered off the coast of Island of Cyprus should also be benefitted by the TC community. Henderson (2013) explained that, TC and Turkey signed the delimitation of the continental shelf and TC has assigned the exploration of the offshore natural gas (the north, east and south areas of the island) to the Turkish National Oil Company (TPAO) which is owned by the Turkish State and two of the offshore blocks are the areas which belong to Island of Cyprus considering within the EEZ.

4.3.3 The Role of Greece and European Union

In the history, the aim of Greece on Island of Cyprus was explained as: Island of Cyprus as a way for the "Great Idea" plan. On the other hand, Tagliapietra (2013) explains the recognition of TC only by Turkey and the aims of GC to reunify the island under the name of the Republic of Cyprus. However, the recent discoveries have reshaped the relationship in the region. Today, it is not so possible to analyse the impact or aim of Greece by only itself, today there is a new actor: EU. The GC is a member of EU (as an island) and also as a member of EU: Greece, undertakes the grantor country role for the GC like Turkey for TC.

The discoveries of large offshore gas fields in both Israel and Island of Cyprus have drawn attention to EU; because one of the top topics of the EU's agenda is energy security as previously mentioned. Leigh & Brandsma (2012) explained the position of EU as "The EU supports the faltering UN process that seeks a comprehensive solution to the Cyprus problem and provides technical assistance to the TC community".

Based on the International Energy Agency report (2012), natural gas accounts for approximately 22% of the world energy consumption. Thanks to its attributes such as low greenhouse emissions, less pollution, energy efficiency and being easy to use, natural gas offers many advantages when compared with coal or other fossil fuels. At the same time, EU's own proven natural gas suppliers are limited and the concept of diversity in natural gas sector is vital in the sense of energy security of the members of EU. According to the BP (2014) data, the energy consumption of EU was approximately 447.9 bcm and respectively the total import amount via pipelines or LNG 333.1 bcm and 65.4 bcm from, as a primary resource, Russia, Norway, Algeria and Qatar. The European Commission's Communication on Energy Infrastructure Priorities for 2020 and beyond, published in 2010, emphasizes Mediterranean as a possible energy corridor for the diversification of the EU's energy supply.

According to the 2030 EU Energy Security Conference (2014) it has been discussed that, by 2020 EU will be facing an energy shortage and Eastern Mediterranean gas could be the alternative solution for the EU's energy security. GC, as a member state, could help to diversify the EU's gas dependency especially on Russia. At this point, the aim of EU is connecting GC and EU in an energy network. Because of the need for energy, EU supports the peace in Eastern Mediterranean. "the economic, regulatory and institutional framework resulting from the making of a common EU policy is the most complete framework of cooperation around energy in the Mediterranean region" (Martinez, et al., 2013). Therefore, according to the Leigh & Brandsma (2012) the main role of EU in the relationships in Eastern Mediterranean is to try to prepare a peaceful stage for the actors that are going have a role in both energy supplying and transportation. Also, Ogurlu

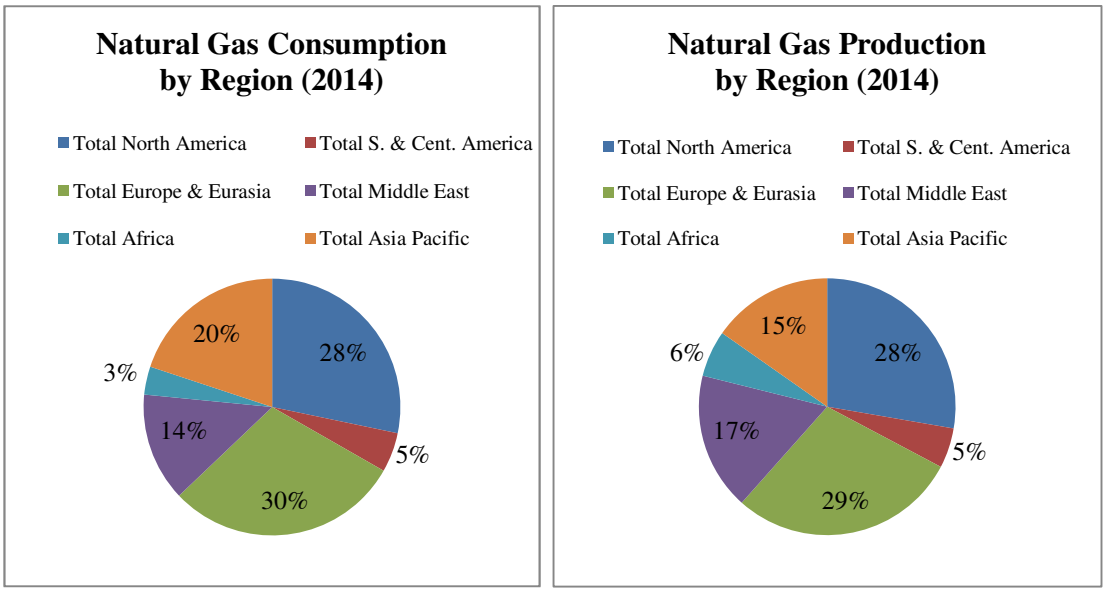
(2012) criticized EU's perspective as "the EU, for its part, has two main concerns: avoiding confrontation between one of its members (GC) and a candidate country to accede the Union (Turkey), and safeguarding its gas supply from the Mediterranean". On the other hand, the position of Greece is explained by Bruneton, et al. (2012) as "this development (natural gas) will benefit Greece immensely and could open the way for starting hydrocarbon exploration in Southern Crete, the Western Greece and the Ionian Sea". On December 8, GC News Agency announced that, "Energy Ministers of Cyprus and Greece, Yiorgos Lakkotrypis and Yiannis Maniatis respectively, met today the EU Commissioner on Energy Union Maros Sefcovic to promote a joint project on a pipeline to transfer natural gas from the Eastern Mediterranean offshore fields to Europe".

CHAPTER 5

NATURAL GAS DEVELOPMENT IN EASTERN MEDITERRANEAN

Eastern Mediterranean Region which consists of Island of Cyprus, Israel, Jordan, Lebanon, Syria and Palestinian Territories has started to gain more importance day by day with the increase in energy needs due to the expected economic growth (World Economic Outlook, 2014). The assumption in this direction will increase according to the EIA Eastern Mediterranean Region report (2013), this grow from 45.3 bcm in 2010 to between 58 and 62 million in 2030 and in parallel, it is expected that energy demand is going to increase noticeably over the next two decades. With present levels of consumption it is also forecasted that, there will be only a few regional oil and natural gas reserves left. However, thanks to the latest large hydrocarbon discoveries, Levant Basin is going to undertake a critical role in meeting the rapidly increasing demand.

Figure 2: Regional Share of Total Natural Gas Consumption and Production, 2014



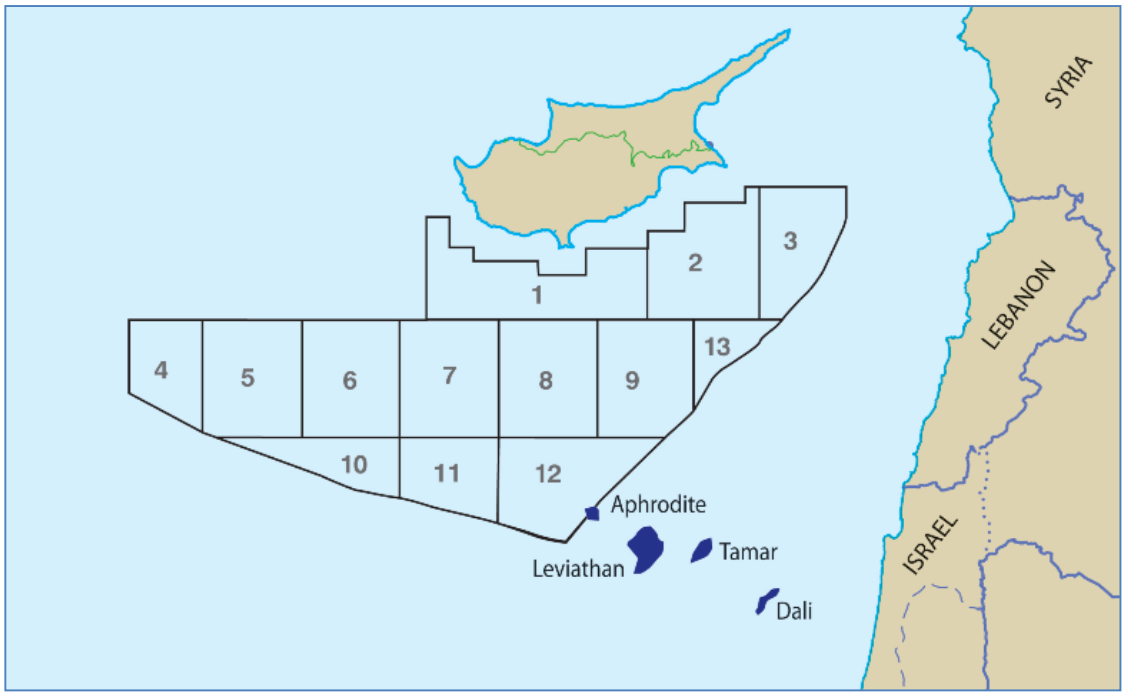
Source: BP Statistical Review of World Energy, 2015

The above figure explains the natural gas consumption and production ratios of the regions. According to this figure, the North America has same ratio with consumption and production means it is neither supplier nor demander of natural gas. On the other hand, while Asia Pacific is a demander region, Middle East is a supplier region.

In the framework of natural gas reserves of the region, Egypt was the first country to operate its reserves in the beginning of the previous century, becoming a vital supplier of gas to Israel and Jordan. Besides, the discovery was made in the coast of Gaza and the initial offshore natural gas production started in Mari-B field in 2004, in Israel. Consequently, the discoveries of Tamar, Leviathan and Tanin fields in 2009, 2010 and 2012 happened respectively. Also in 2011 offshore discoveries occurred in the coast of Island of Cyprus (Leigh & Brandsma, 2012). Current natural gas reserves in the region

has relatively significant role in market. There are eight important basins in the region which are Island of Cyprus, Eratosthenes High, Latakia, Levant, Judea, Nile Delta, Western Arabian province, and Zagros province. Israel and Island of Cyprus have experienced the largest exploration of new natural gas resources (Darbouche, et al., 2012).

Figure 3: Eastern Mediterranean Region's Explored Natural Gas Reserves



Source: Petroleum Geo-Services, 2014

Historically, during the end of the 1960s, offshore drilling started in the Eastern Mediterranean region but until the beginning of 2000s most of the exploration wells happened to get dry. The discoveries that were made during 2000s were huge in quantity. Based on the EIA Eastern Mediterranean Region report (2013), the first field to be discovered was Noa (1.1 bcm) and the biggest one was Mari-B (42.47 bcm).

Currently the Mari-B field is at exhaustion period and could be further used as natural gas storage. Later in 2009, the discovery of Tamar field and the year after discovery of Leviathan was the largest discovery of natural gas field in a decade. Tamar field contains 283 bcm of natural gas and Leviathan field nearly contains 509 bcm of gas. The fields discovered between 2009 and 2012 are Dalit (14.15 bcm), Tanin (33.96 bcm), Dolphin (2.2 bcm), Shimson (8.49 bcm), Karish (50.94 bcm) and followed by the Island of Cyprus basin that consists of Aphrodite (198 bcm). The latter field is assumed to consist of 200 bcm of natural gas and may contain oil in the deeper levels. These discoveries were in the Levant basin that is located at the coastal area of Lebanon, Israel, Gaza, Syria and Island of Cyprus. But most of this basin overlaps the Exclusive Economic Zone (EEZ) of Israel, Lebanon and Island of Cyprus (Levy & Nathanson, 2012). According to the EIA Eastern Mediterranean Region report (2013), Leviathan has the largest explored natural resources in Eastern Mediterranean, located 80 miles off the coast of Israel and it is 5,000 feet deep under the water and having 509 bcm estimated capacity.

The important field in Israel is Tamar with 283 bcm reserves and Demiryol (2014) believed that it is enough to meet Israel's energy demand for next ten years. Beside the Tamar and Leviathan discoveries in Israel, Cyprus also has 198 bcm reserves as Aphrodite; furthermore, there is a possibility for 849-1132 bcm of additional natural gas resources in Island of Cyprus waters and there is also one more important field in region; Aphrodite-2. However, the location is on the Israel side and has boundary with Island of Cyprus. It is estimated that Aphrodite-2 has approximately over 84 bcm of recoverable resources according to EIA Eastern Mediterranean Region report in 2013.

The distribution of the natural gas reserves is as below;

Table 1: Recent Natural Gas Discoveries in the Levant Basin

	Country	Discovery Date	Field Name	Estimated Recoverable Reserves (bcm)	Year of Firs Production
DIMENSIONS	Island of Cyprus	2011	Aphrodite	198	2017
	Israel	1999	Noa	1.1	2012
		2000	Mari - B	42.47	2004
		2009	Dalit	14.15	2013
		2009	Tamar	283	2013
		2010	Leviathan	509	2016
		2011	Dolphin	2.2	Unknown
		2012	Shimshon	8.49	Unknown
		2012	Tanin	33.96	Unknown
		2013	Karish	50.94	Unknown
	Palestinian Territories	2000	GazaMarine	28.31	Unknown

Source: U.S. Energy Information Administration, 2013

On the other hand, Martinez, et al. (2013) examined that the recent discoveries of offshore gas fields in the Eastern Mediterranean region provoked the tension between littoral states. These fields require huge investments in order to be operated but because of the maritime boundary disputes, the investors are trying to take cautious actions in the region.

Regardless of the recent discoveries, the ongoing political and economic disputes among littoral states of Eastern Mediterranean region reoccurred as a result of these new findings. DeMicco (2014) underlined that while considering the region in general, countries are subject to bilateral disputes between each other. First of all, Elakawi (2014) highlighted that because of the Arab Spring that occurred in 2011, several North African and Middle Eastern countries which are coastal states of Mediterranean Region experienced civil war in their countries that resulted in political transition in countries like Egypt and Syria. Secondly, the relationship between Turkey and Israel is criticisable. On the other hand Arbell (2014) listed the reasons behind of it as the tension at the Davos Economic From between Turkish Prime Minister Erdoğan and Israeli President Peres in 2009 and Israeli attack to Turkish ship Mavi Marmara in 2010. Final dispute which is also focus part of this study and may be the biggest dispute in the region is the everlasting Cyprus conflict.

In the framework of the disputes stated above, the possible gas projects are restricted in terms of these economic and political issues. Bryza (2013) presents some alternative projects and the first one is the LNG terminal in Island of Cyprus which would be expensive to establish but if it takes place, it would increase the strategic importance of Island of Cyprus to become a natural gas transit hub for the Eastern Mediterranean. The second alternative is the offshore pipeline to mainland Greece. Even though this pipeline project is considered to be less expensive than an LNG terminal, the sub-sea pipelines would create technical difficulties for Greece. The third and last alternative is the sub-sea pipeline from Israel to Turkey is the cheapest export option for Leviathan and

Aphrodite gas which would pass from the EEZ and Continental Shelves of Island of Cyprus, Lebanon or Syria.

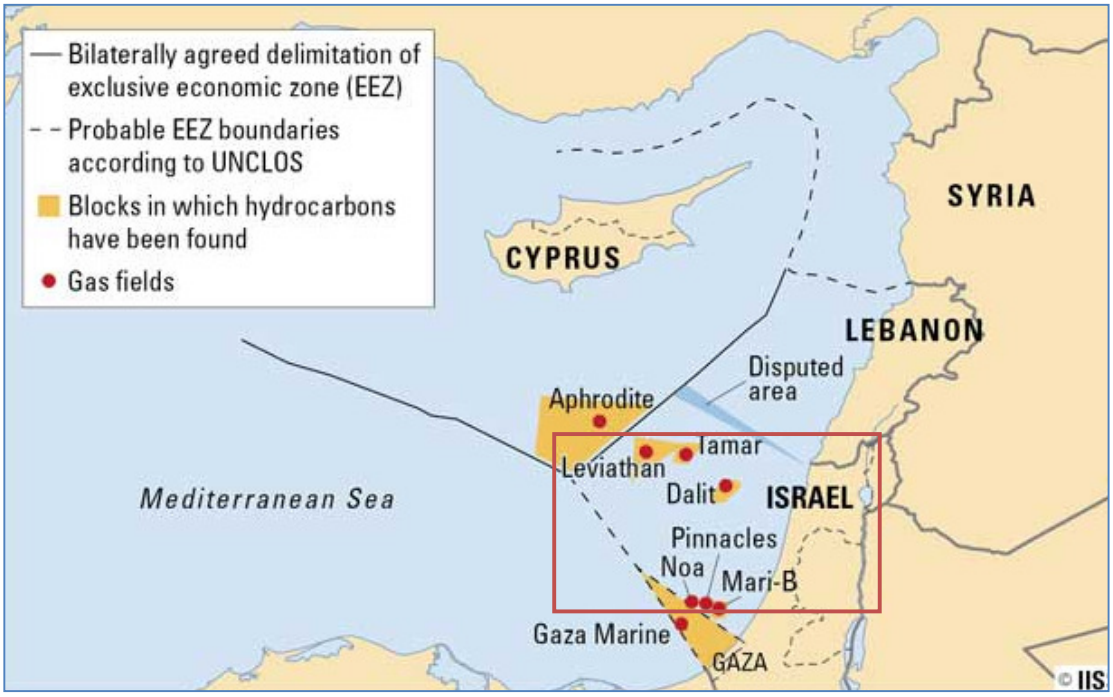
CHAPTER 6

NEW OFFSHORE NATURAL GAS RESOURCES: MAIN ACTORS

6.1. ISRAEL

Israel had been an energy importer country to meet the energy demand before the discovery of the Mari-B gas fields in 2000 however, after the discovery of Tamar and Leviathan, it become a new possible and alternative energy supplier. After the recent natural gas reserve exploration of the Eastern Mediterranean region, it is known that Israel has the biggest share with the Levantine reserves. Israel has been exploring for offshore gas for years. The Israel-American Consortium consisted of Noble Energy Inc. of Houston, Texas. Since 1998 Delek Group which is the partner of the Noble Energy Inc. was working on the offshore gas fields (Elliott, 2013). In 1999 Delek Group discovered the Noa field and the Mari-B field in 2000 according to the Elliott report in 2013. The history of natural gas is summarized by the Boncourt (2013) as; after the other parts exploration, Noa became weaker; on the other hand, Mari-B is still a big natural gas provider for Israel is domestic energy need. According to the Tagliapietra (2013), the biggest step / process were in 2009 with the discovery of Tamar and the huge resource, Leviathan by Noble Energy in 2009 and 2010. These two explorations are not only enough to cover Israel's energy needs, but also make Israel net exporter of natural gas.

Figure 4: Israel Offshore Gas Fields



Source: The International Institute for Strategic Studies, 2012

One of the biggest offshore fields, Tamar was discovered 90km off the northern coast of Israel in February 2009. Although the research on the actual capacity of the field still continuing, the capacity of Tamar is estimated 250 bcm at the moment (Tagliapietra, 2013). The main investors are Noble Energy (36%), Delek (15.6%), Houston-based Isramco (28.7%) and Israeli firm Dor Alon Energy with 4% (International Oil Daily, 2012). Leviathan was discovered in 2010 in the 135 km off the northern coast of Israel with 476 bcm capacities (Tagliapietra, 2013). There are also some small fields in the region which are Dalit was discovered in 2009 by Noble (14 bcm), Dolphin (2.3 bcm) and Tanin (31 bcm) are also discovered by Noble in 2011 and in 2012 ATP Oil & Gas Corporation has found the Shimshon field (7-15 bcm) according to Natural Resources Administration data in 2013. After all these, in 2011 Israel Natural Gas Authority

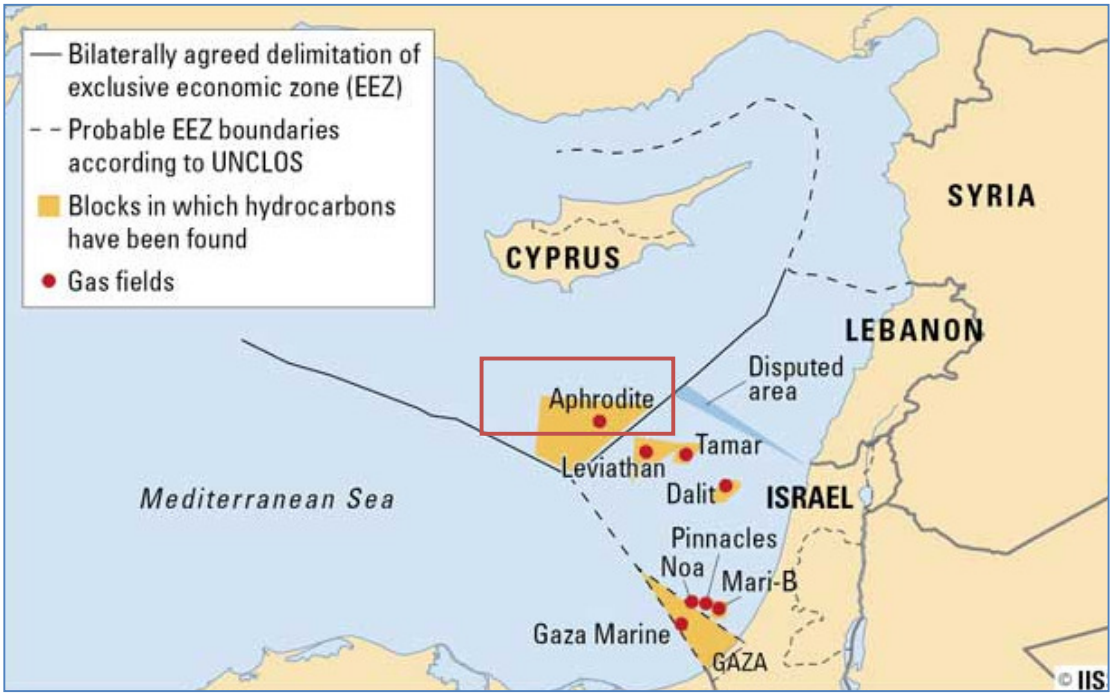
Director-General, Yehosua Stern (2011) declared as estimation that total gas potential of Israel will be 1000 bcm. "In total, the country's gas reserves are grossly comparable to these of Oman (800 bcm), Lybia (1200 bcm) or the Netherlands (1500 bcm)" (Boncourt, 2013).

6.2. ISLAND OF CYPRUS

In 2006 GC has started to increase hydrocarbon exploration in an area of 51.000 sq km offshore Island of Cyprus and the area divided into 13 parts but before that Akçali (2008) expressed that GC already signed an EEZ agreement with Egypt in 2003 and Lebanon in 2007. In February 2007, GC has started its initial global suggestion for three year oil and gas exploration licences. Gürel & Le Cornu (2013) stated that, at the same time, Noble Energy was conscious a licence in Block 12; in this manner, "production-sharing contract" was signed with Noble energy in 2008.

Mediterranean Policy Program (2012) data represents that, in 2011 Island of Cyprus reserves (Block 12) was discovered by Noble Energy as an Aphrodite field with a 140-220 bcm estimated natural gas capacity. According to the MEES (2012), GC's Energy Department announced that the country's total amount of offshore natural gas reserves is 198 bcm.

Figure 5: Cyprus Offshore Gas Fields



Source: The International Institute for Strategic Studies, 2012

The first exploration at the region was in 2007. Aphrodite, the one next to Tamar was the biggest success for both Noble Energy and Island of Cyprus. Boncourt (2013) examined that Noble was expecting also to find oil; because of that, after the first review and United States Geological Survey (USGS) studies, in 2012 much more successful second licensing process was launched and the process extended to the 2, 3, 9, 10 and 11 blocks. These blocks were also endorsed to an Italian-South Korean joint venture ENI-KOGAS, and Total.

In June 2013, both Noble Energy and GC publicized the outcomes of second drilling forecasts at Block 12 which is approximately 142 bcm of natural gas. Keith Elliot (2013), who is Noble's senior vice president for the Eastern Mediterranean region, stated

that "While the A-2 location has successfully defined the northern area of the discovery, we anticipate additional appraisal activities are necessary to further refine the ultimate recoverable resources and optimize field development planning". In fact, 142 bcm of natural gas is enough for Island of Cyprus to meet energy demand for next 140 years when Island of Cyprus' yearly energy demand considered as 1 bcm; however, Kaminara (2013) believes that GC government was expecting more reserves to be extracted therefore, they are planning to export the natural gas to EU. Similarly, Gürel & Le Cornu (2013) stated that, "If all of this Aphrodite gas were to be exported to the EU, based on a 25---year typical supply period, it would be enough to meet around 1.4 % of the EU's annual needs". Therefore, GC was planning to export its natural gas to Europe as a liquefied natural gas (LNG) by 2020 with the cooperation of Israel. (Hazou, 2013).

After all, TC declares a right from the Aphrodite fields and this view is also supported by Turkey, claiming that GC government does not have single power to make decisions on the island's natural gas resources and insisting the exploration and exportation to be ceased until the resolution of the so called Cyprus disputes (Tagliapietra, 2013). According to the Albanese (2012) because of GC is continuing drilling operation by alone only in southern part of the island, the TC gave the exploration authority on its behalf to the Turkish Petroleum (TPAO) on September 22, 2011 for the exploration of offshore areas also in the northern part of the island.

CHAPTER 7

ANALYSIS & FINDINGS

The '*Analysis and Findings'* chapter will be demonstrating the response of the determined research questions that are indicated in the introduction part of the study, in the consideration of conflict management theory. It is stated in the previous chapters that this study will also supported with the in-depth interview method. Therefore, the results also will be shaped by the elite level executives in the state policies' perspectives.

The story of the determination of these two people for the interview has started with the research for finding the true department which is working on both international relations and recent discovered resources. With this purpose, it has started with sending request letters to the Ministry of Agriculture, Natural Resources and Environment and Ministry of Foreign Affairs in the Greek side and Ministry of Food, Agriculture and Energy in the Turkish side. After the acceptation of the request letters, both ministries directed to the Mr. Nicolaides who is directly working on the hydrocarbons and also has also historically experiences on the Cyprus conflict (before & after the Turkish Intervention). And in the Turkish Cyprus, the first address was the Director of Energy Ministers and the aim of the thesis and why this topic has been chosen, what will be the questions are explained in detailed to the director and he directed to the both presidency and prime ministry. There made couple of quick interviews with the authorities and it has been

understood that Deniz Artun from the Foreign Affairs is working on the impact of the recent discovered natural resources.

The *first research question* of the study is about *which countries have field ownership in the region.* As it mentioned on the literature review, based on the U.S. Energy Information Administration (2013) data, the main countries that have field ownership in the region are; Israel which has the biggest share, Island of Cyprus as second country and Palestinian Territories. However, according to the research that have been made in this study, there are still ongoing explorations of the natural gas resources in the region. It generally refers that; there could be new possible natural gas resources; also the share of the natural gas reserves might be increased for the countries that have natural gas resource reserves.

The *second research question* is about *the possible transportation options for the natural gas in the region.* The literature review that has been made during this study directs that there are three possible transportation options. The *first option is LNG Terminal in Island of Cyprus.* It can be said that, it is the transportation option for Island of Cyprus. The plan is to start to LNG plant from the southern coast of the Island of Cyprus at Vasilikos for the Cyprus natural gas reserve: Aphrodite. However, Island of Cyprus energy reserve capacity is not enough for the operate LNG terminal by itself. In this point, in case of capacity problem, the second plan of the Island of Cyprus is including also Israel gas to the LNG terminal. In terms of the economies of scale, increasing the amount of gas will decrease the costs of LNG. Therefore, both Israel and Island of Cyprus could provide their natural gas to both Asian and European markets

(Henderson, 2013). The *second option is offshore pipeline to mainland Greece.* The aim of this project is again exporting Aphrodite and Leviathan natural gas to Europe. It is including into three sections. One is a pipeline from fields to the Island of Cyprus which is 1700km is 1200 km offshore and 500 km onshore to Greek Adriatic mainland coast, and connects to Italy with via Interconnector Turkey-Greece-Italy (ITGI) pipeline that has 10 bcm pipeline capacities with 210 km length, second is a connecting pipeline from the Island of Cyprus to Crete with 1550 km offshore and 20 km onshore pipeline to reach northern Greece with the connection to Bulgaria via Interconnector Greece Bulgaria pipeline that has 5 bcm capacities and 180 km length and the third section is the pipeline from Crete to mainland Greece that has two options to reach Europe from Crete islands. The pipeline from the Island of Cyprus to Greece which is called Eastern Mediterranean pipeline bypass ITGI project which provides to reach Shah Deniz natural gas to Greece and Italy. Also the other possible effect is, Greece could bypass Turkey (Trans Adriatic Pipeline to southern region of Europe) with this Eastern Mediterranean pipeline project and that can be effect Turkey and the Island of Cyprus relation in a negative way (Pelaghias, 2012). On the other hand, it will be the deepest and longest pipeline it requires investment and capital expenditures. Another critical point is: it is passing through the Turkish continental shelf claim area; therefore the ratio of the possible of the outcome of this project is questionable. The *third option is sub-sea pipeline from Israel to Turkey.* Although, there have been political problems between Israel and Turkey as mentioned in the previous chapters, the pipeline to Turkey is the most cost efficient option. It is approximately 600km from Leviathan gas field to the Ceyhan port. Diplomatic sources in Jerusalem stated that the pipeline to Turkey is way better than the LNG facility.

The *third and the main research question* is about *the impact of the Eastern Mediterranean natural gas development on the so called Cyprus conflict.* To understand the impact deeply, as mention before, in-depth interview method was implemented. For these interviews, some specific questions are prepared. However, both interviews are not limited and continued one by one with the questions mentioned in the second chapter of this study. Therefore, the following part of this chapter examines the interview in order to enhance this study's analysis for the third question through the elite level executives' perspectives.

In order to examine better the main question of the thesis, the recently-discovered natural gas development in Eastern Mediterranean region could be the tool to solve the Cyprus Conflict. It has been made an interview based on the in-depth interview method with the people who have a critical role for both Turkish Republic of Northern Cyprus and Republic of Cyprus.

Cyprus representative Mr. Stelios Nicolaides, who is the Acting Director of Hydrocarbon Service, started his speech with the term of "*sustainability and energy"*. According to his definition, sustainability is an important word today and it is not only within energy, it is everywhere; we are sustaining everything, in every sector. Similarly, he is defining energy as a commodity. The second question was related with the *impact of decreasing prices of oil in the global economy*. According to Nicolaides' point of view, in today's world prices does not have a direct relationship with gas and demand; because, we always have demand and supply. Today the main points are the crisis like 2007 economic crisis (prices increased in one night). The third question was about the

impact of recently discovered Aphrodite field, which is an opportunity for the future of island, for the so called Cyprus conflict. First of all, he explained his feelings hearty and stated that he never wanted the division of the island and gave example for this situation from his wife who is from one of the Northern part of Cyprus villages before the war. But he believes that this situation is because of the politics and because of that he described this so called conflict as a "pity situation". He believes that it was the aim of United Kingdom; "divide and rule", that's why it is a pity for the people of Cyprus who are deceived. On the other hand, he believes sincerely that the recent discoveries are definitely a possible tool for solving this conflict only "if they will leave us alone".

Turkish Republic of Northern Cyprus representative did not want name to be published because government is managing both right and left sided parties together, that's why the nick name was used in the study. First s/he explained the current situation followed by the natural gas development as; "the discovered natural gas in the region is 140 bcm and the yearly energy need of Cyprus is 1 bcm; it means that Cyprus has 140 years of energy. Therefore, they are considering benefiting from it; there are couple of options; like LNG which is the best way for each energy owner country because of not being dependent. However, with LNG there are some restrictions i.e. capacity. For an LNG terminal, there should be at least 155 bcm energy in order to make LNG an economical option. The other option is pipeline; however, in terms of dependency perspective and long term agreements which are the nature of pipeline contracts TC Cyprus have some concerns". In the second part, s/he tried to remark on the cooperation; "For the transportation options, Israel's attitude is important, how Israel want to transport Leviathan and Tamar? The answer is also going to shape the options; LNG or pipeline.

Because as previously mentioned, if Cyprus and Israel are going to come together and make an agreement on LNG (create a national consensus), Turkey is directly going to be bypassed. On the other hand with the regional cooperation, pipeline via Turkey is the best option for economic return, but unfortunately there are political problems, while Israel-Mediterranean pipeline is 20 billion dollars, the pipeline via Turkey is going to be 2.5 - 5 billion dollars with a capacity of 48 bcm". S/he briefly explained the aim of Turkey who wants to be a hub country and Turkish Republic of Northern Cyprus which requires the equal sharing for all the benefits / income that are derived from natural resources between the north and south.

Those are the elite level executives in the state policies; additionally it has been also made a research on the newspaper and journal reports and tried to understand and criticize the different viewpoints. According to Havadis Gazette (2014) there is an interview between the columnist Esra Aygın and International Law Professor Harry Tzimitras. The interview focused on one main question; *does natural resource belong to the state or public?*[9] Tzimitras' opinion about this question is, the decision of United Nations General Assembly in 1962 on the permanent sovereignty over natural resources which refers to the natural resources belonging to the people and nations not to governments. He also stated that "it is possible to see clearly in the decision of the General Assembly by talking about the nations and people, never mentioning the states. Therefore, beneficiaries of natural resources are the people or nations, states are just the

[9] Havadis Gazetesi Online. Aygın, Esra. 2014. *Interview with Harry Tzimitras. (*Available at: http://www.havadiskibris.com/Haberler/roportaj/dogal-gaz-devletin-degil-halklarin/41215).

representatives to benefit. According to this, Turkish Cypriots are entitled to any benefit/income that is derived from natural resources -which I guess nobody refused". The last question of the Aygın is that; *how should this issue be resolved?* The answer of the Tzimitras is; First of all; obviously it is possible to find a common way if there is a wish. Second of all, all parties must refrain from excessive and provocative actions and reactions. Consideration of regional and international realities and the history is very important, because the possible solution for today could be impossible for tomorrow. Therefore, the regional and international environment should be evaluated in a stable and realistic manner with a constructive approach. Realism - here does not mean to give up legal rights, the important point is to evaluate and determine where people's interest is rather than the states' with a realistic way. The energy resources dispute needs urgent attention, due to the fact that as longer periods are spent on debate without solution, conflictual situations become more rooted and difficult to resolve. Missing the usage of natural resources' benefit and welfare for all Cypriots would be a pity. Above all, it will be a much bigger shame if the natural resources create new conflicts rather than to overcome the existing conflicts.

CHAPTER 8

CONCLUSION

Since 1950s, there has been high tension between Turkey and Greece over Island of Cyprus. However, the offshore natural gas resources discovery brings to mind a simple question: could this development be used as a tool to solve this conflict or will it create further conflicts? That's why, this thesis was looking for the answer of this question; potential impact of Eastern Mediterranean hydrocarbon development on the Cyprus conflict.

In the last few years, with the discovery of important natural gas reserves in the Eastern Mediterranean region, the Island of Cyprus has also continue to work on the discovery of the natural resources. While number of countries focus on claiming a right from the offshore reserves, Island of Cyprus has seen this situation as an opportunity or a way to have a stable and growing economy. (Coats, 2015). A potential agreement over exploiting hydrocarbon deposits in the Aphrodite field and the transportation of the hydrocarbons in the Leviathan field to Europe could enhance the cooperation between two sides, especially in the aftermath of the breakdown of peace talks between Greek and Turkish Cypriots in October 2014, and in 2015 at the in the "UN buffer zone that bisects the isle" conference even resulting in a solution to solve the conflict.

It was mentioned that there is a conflict with the natural resources and the GC claims right on it and avoids including the TC in the international agreements. However, Tzimitras as a Professor of International Law, stated the United Nations General Assembly's decision on the natural resources which is saying that the natural resources belongs to the people who live in that country, not to the government or states. It directs to the "common interest" and saying in this way there could be cooperation between the two sides. Another suggestion of Tzimitras is related with political disputes. He underlined that all parties should avoid from the provocative actions especially while building a peaceful environment. Coats (2014) stated that "Specifically, natural gas potential has been mentioned in discussions related to reunification talks between Nicosia and the Turkish-held northeast part of Cyprus, which has remained separate since 1974". As it was mentioned from the natural resource conflict part, the "common interest" strategy could be used also in the transportation. The aim of Turkey is obvious, trying to be a hub country and to protect the rights of TC. From the interview, the elite level from the Northern part described the most economical way and higher turnover project for Island of Cyprus would be the pipeline project via Turkey but for this project, "regional cooperation is a must" s/he said.

It is obvious that the main actors are Northern and Southern parts of Cyprus. Mr. Stelios Nicolaides emphasized the other actors of the conflict Turkey, Greece, EU and the United Kingdom and he highlighted the importance of non-interference of these actors in the energy cooperation which has the potential to bring solution to the "Cyprus" conflict. Like Nicolaides, Vatansever (2012) also stated that "the Cyprus conflict has started in the international arena after the entrance of United Kingdom into the island".

Collectively, the finding of this study demonstrates that a new approach could even serve as a tool in resolving the conflict such as better understanding the relationship between the natural resources related security issues and conflict challenges. In order to understand the impact of energy resources on conflict resolution, in-depth interviews with both GC and TC representatives were conducted. Hence, it also gave better understanding of the current and future strategies and policies of the GC and TC. After all, both responses from the interview, academic researches and journals direct that, as long as there is not any interference from other powers and with regional cooperation, recent natural gas discoveries could be the used as a tool to solve the Cyprus conflict.

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