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The importance of Energy Security.

The role of Western Balkans in the security of energy supply.

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M1310

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Thessaloniki, October 2010

ABSTRACT

The security of energy supply in South Eastern Europe (SEE) and especially in the region of Western Balkans is discussed in this paper. Since the Soviet Union collapsed a new reality emerged in SEE including politics and economy changes that affected energy policy. Now that the Soviet Union is no longer present new players appeared in the energy map of SEE while markets are under transformation. New opportunities are created including challenges even for the small Western Balkan countries. This paper presents how the region of Western Balkans is responding to the new chances in the field of energy, regarding oil and natural gas use and transportation. Furthermore, the position of Western Balkans in the energy map of SEE will be examined along with the energy security of the region in question and how this affects Europe.

The energy resources of Asia and their export in the markets of Europe and West in general, is an issue that has always been in the list of priorities of the Western countries. The creation of new independent states after the dissolution of USSR brought up the question of the exploitation of the energy supplies of the Caspian Sea. This new reality posed serious questions about the control of these energy sources and the energy roads to the West. The answer to the posed questions lies on the policies and diplomacy of the countries involved, on the major oil companies, on the international financial institutions and especially on the regional players of the Black Sea and the Caspian. In this paper, the importance of the access to energy resources and the formation of energy security as a policy will also be discussed.

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1. INTRODUCTION

After the end of the cold war and the USSR collapse, the scenery in South Eastern Europe (SEE) changed dramatically. The fall of the Soviet Union was not only a historical fact of tremendous political value but a fact with great economical impact. From this incident, energy map couldn't have stayed unaffected. It was the beginning of a new era. In this context new regional players emerged. Western Balkan countries among them, now acting on their own, shaped their national energy policies taking into consideration the need for security of energy supply.

Security in energy supply is a modern problem and part of a bigger picture regarding energy. To better comprehend why energy security is important one should be aware of the importance of energy in general. Energy is an absolute precondition for the world to be as it is known and to continue to exist. Without energy life would be intolerable and economic growth and development simply impossible. Energy is what literally makes world move. It is the fuel of the economy. Without it nothing could move, grow, operate, develop, and evolve. The lack of energy would mean return to primitive life conditions or even death. Energy equals life.

These all may sound exaggerating but they are true. For that security of energy supply is an issue of vital importance. Each state alone and all together, should form an energy strategy that would enable them to better manage the world's known energy deposits and secure the necessary energy for their people and their economies. Energy comes in many forms and there are various energy sources, but they are not endless. Energy deposits will propably eventually come to an end this is something highly undesirable. Security of energy supply is an urgent need and comes as the necessary policy to moderate the use of energy and to protect the world from future misfortunes. Energy is a valuable commodity that the world simply can not afford to waist and that is why energy security is so important.

Over the last decade, significant changes have taken place in the expectations for the world energy system. After a long period of excess capacity, since 2001, prices for oil and most energy commodities have risen sharply and become more volatile.[1] In 2005 fuel supplies suddenly run short forcing major energy consumers to turn to other less safe supply chains. The recent crisis in global economy, the reduction in oil production and most importantly in energy stock supplies as well as the interruption of gas supply on behalf of Russia, brought up abruptly the importance of energy security planning.

In this paper Energy Security as a situation and as a policy is described. In chapter 2 energy security will be discussed as an issue that concerns the whole of Europe. Furthermore the role of Russia as a factor in the energy security of Europe is described, along with the importance of the Caspian and the Black Sea. In the following chapter, the energy security in Western Balkans is presented for each country separately and the role of Greece and Bulgaria is discussed as major regional energy players. Lastly in chapter four, the planned energy projects in the SEE region are presented, in which Western Balkan countries participate.

2. Energy Security: a pan-european issue

2.1 The importance of energy

Energy is something that we all use in our everyday life in a direct and indirect way. Everybody has its own energy footprint that consists of its individual use of energy and the indirect energy consumed in society that benefits all people. Energy is a complex concept that we use in physics, biology and other sciences but it also the word we use in order to describe how electricity is made, how we have heat, what makes industries and machines work, what

[1]David G. Victor and Linda Yueh, *The new energy order*, www.foreignaffairs.com

makes things to move and grow. For the purposes of this paper the focus will be on the energy deriving primary from oil and natural gas. Nevertheless there are a lot energy sources such as fossil fuels, water, wind, sol etc , that are all part of the same energy chain.

Before considering the many energy demand and supply trends it is useful to reflect the importance of energy at all aspects of our lives.[2] Energy is used everywhere. Without it world would go million of years back and growth and development wouldn't be possible. Energy flows from many sources, exists in a variety of interchangeable forms and drives all systems[3]. It is important whether it is solar, mechanical, nuclear or the simple energy of human bodies. Energy doesn't disappear, it simply changes forms. Nevertheless energy sources do disappear. This happens because they are in limited quantities in nature and people don't posses the means to exploit all of them or simply can not afford to do so.

Over the last 150 years the evolution of energy has allowed to people in developed countries to achieve a lifestyle in which access to energy is taken for granted. The case now is to secure this energy so as everything to continue to be as it is and developed countries to meet their existing needs. There is also a large part of the world where access to energy represents hope and opportunity, in these places, affordable and reliable energy is of vital importance. It means improvement of living conditions and most importantly it means survival.

Energy is at the core of the economic and social activity in industrialized countries.[4]At a national and international level, energy is the lifeblood of modern economies. For developed nations reliable energy fuels the technologies and services that enrich and extend life.[5] For developing nations

[2] Exxon Mobil energy outlook 2030, www.hooverdiana.com
[3] http://shs.westport.k12.ct.us
[4] http://europedia.moussis.eu
[5] Exxon Mobil energy outlook 2030, www.hooverdiana.com

energy is the means to accelerate changes and improve life. Overall energy is part of life and without it nothing would be the same.

Energy is not just a meaning or a status, it is so much more. Nowadays energy is also a product that people trade. It is something economies need to move and something that people, industries and countries use to make money. The main features of energy as a product are that is of vital importance, of high economic value and in scarcity. Its first characteristic makes it also a commodity and in a free market world this only increases the value of energy as a product. Furthermore it makes more necessary the need of states to control energy supply and deploy an energy strategy that will enable them to offer this commodity to their people.

For these reasons and more, energy issues, among them energy security which is the object of this paper, are vitally important and demand understanding. In the following chapter, the importance of energy security will be discussed as an energy issue of high importance and value in an increasingly developing world that thirsts for energy.

2.2. Energy Security

Energy security is a question of affordability, acceptability and accessibility[6]. It is a function of diverse suppliers, fuel types and transportation ways. Diversification gives a greater chance to ensure energy security. Cooperation and governance are important elements in finding solutions to energy security problems.[7] The objects of this chapter are what energy security is, why it is so important and what are the practices implemented in order to achieve it.

[6] Rethinking Energy Security, World Economic Forum
[7] ibid

Energy Security can be described as the "uninterrupted physical availability at a price which is affordable, while respecting environmental concerns".[8] Energy security it's an important part of the global energy policy making, highly connected to the economic development and the environmental protection that together constitute the agenda of International Energy Agency (IEA).[9] As a matter of fact energy security is the reason for the very existence of IEA. Its primal goal was to secure oil productivity and distribution and it particularly focused on emergency preparedness in case of supply disruptions.[10]

Since then, global energy has gone through significant shifts and energy security has evolved as a concept. While in the past oil supply was the only preoccupation, now gas security, electricity markets and the reliability of renewable energy sources have been also added.[11]Furthermore, energy security is considered highly linked to the climate change issue. Nevertheless for the purposes of this paper, the focus will be only on oil and gas security of supply.

According to estimations[12] world energy use will rise by 1.5% per year on average to 2030 with fossil fuels accounting the bigger part of the energy demand. At the same time global energy production is not growing while energy stock supplies are dropping and new investments in research are not made due to the huge cost of drilling.[13] This indicates two things; first that today's energy path leads to the significant rise of CO_2 emissions and second that energy sources are not endless. The need for a thorough sustainable

[8] www.iea.org
[9] International Energy Agency was established during the '73/'74 oil crisis in order to face it and to deal with future disturbing situations in the field of energy. IEA has 28 members in total out of which 16 are founding members.
[10] Nobuo Tanaka, *Security of energy supply in SEE,* international Conference organised by the European Investment Bank, Greece, March 2010, www.iea.org
[11] Ambassador Richard H. Jones, *Seeking of a common resolution for energy security,* Energy Security: the IEA perspective, Istanbul, April 2009, www.iea.org
[12] According to the IEA's "business as usual" scenario in the World Energy Outlook 2009
[13]see Edward L. Morse, *Low and Behold, Making the most of Cheap Oil,* foreign affairs, vol. 88, No 5

energy security planning comes more pressing than in the past due to the double jeopardy of damaging climate changes and the reduction of the energy supply capacity.

Today the need to promote energy security as a policy is more urgent than ever. All facts indicate that the current energy trends are unsustainable from an environmental, economical and supply security point of view. Furthermore, energy security needs to be combined with other global issues[14] such as economic crisis, wars, environmental issues, geopolitics, economic rise of developing countries etc. After all what takes place on earth weighs heavier than what lies underneath.[15]

2.3. Energy diplomacy and politics

The security of energy supply and especially oil has always been in the interest of Western countries, especially those that lack energy resources of their own. The production and the distribution of oil are issues of high political and economic significance. Wars have been conducted for the control of energy supplies and the world economy is depending on them[16]. A major part of the energy wealth is concentrated on Middle East and Central Asia. Western countries need to cooperate with them in order to secure their energy supply, despite the fact that they don't share the same democratic values and civilisation models. Energy survival is far more important and cooperation is promoted through diplomatic ways. One of the latest trends in the energy diplomacy is the pipeline politics. This includes the construction of energy projects for the transportation of energy supplies.

This is a kind of policy that requires long planning, strong financial support, good diplomatic relations and cooperation among many countries. It is a risky business considering the fact that the political situation in the producing countries is usually not stable. Furthermore, the perseverance of good foreign affairs is depending on many factors[17]. So it is understood that it is a very

[14] Anup Shah, *Energy Security,* www.globalissues.org
[15] Ανδρέας Ανδριανόπουλος, *Ολοκληρωτικός Πόλεμος για την Ενέργεια,* Εκδόσεις Libro, Αθήνα, 2006
[16] The two most famous oil crises in the 70's had a major impact on the world economy. Oil prises rose and affected not only the economy as an abstract but people's everyday life.
[17] One recent example of it is the political turmoil in Caucasus area in August 2008. The Russian military presence not only undermined the stability in the whole region but it was an

difficult task to put money and effort in something that it is not totally secured in political and therefore economical terms. Of course the economical gain of the producing countries and the energy dependency of the importing ones are the main factors that keep the game in balance and going.

2.4 The European approach

Europe's energy dependency seriously concerns EU members. World's oil and gas reserves are unevenly distributed and are mostly located in politically or/and economically insecure regions.[18] Having already exploited its own oil and gas sources, EU is totally dependent on non-EU countries for future supply.[19] EU has an official energy policy that promotes energy markets liberalisation and diversification. In practice though, member states do not follow a common policy but instead act on their own according to their separate interests. This illustrates the inability of EU to act as a unit and the frustration that is created due to the need for energy. The chapter that follows shows the level of EU's dependency and what causes the disparities in its energy policy.

According to the IEA, Europe's oil and gas net imports reach 10m b/d and 300 bcm respectively, while it is estimated that they will be over 8 m b/d for oil and that the gas imports will increase by at least 100 bcm.[20]This increase was expected and will continue due to various reasons. Many of EU's production countries (such as Norway and UK) reduced their production during the past decade. Furthermore, EU's opening towards East added to its statistics countries with low oil consumption that tend to increase it in order to reach the levels of development that EU requires.[21] On the other hand, these countries

issue of international political concern. And of course as it was only natural it gave rise to the oil prices.

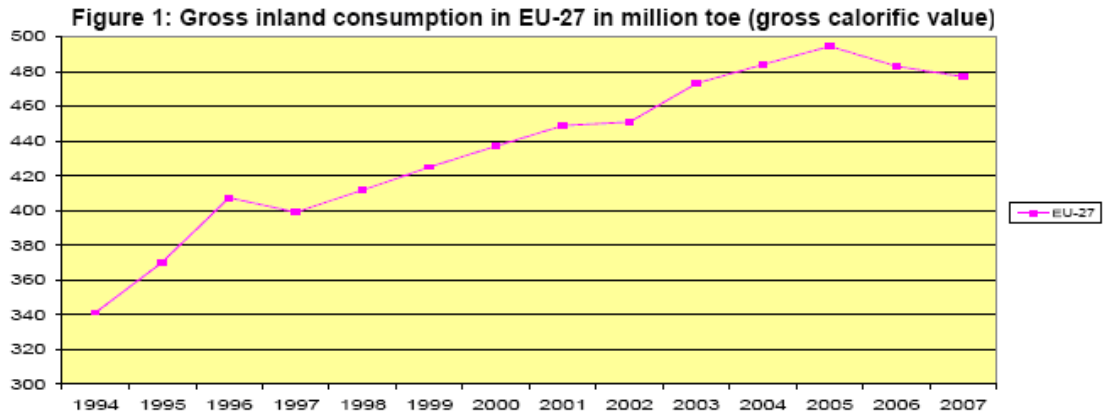
[18] Geopolitics of EU energy supply, www.euractiv.com

[19] ibid

[20] Nobuo Tanaka, *Security of energy supply in SEE,* international Conference organised by the European Investment Bank, Greece, March 2010, www.iea.org

[21] Μπουτέλης Κ., *Μηνιαίο δελτίο Φεβρουαρίου 2010,* Κέντρο Ρωσίας, Ευρασίας και Νοτιοανατολικής Ευρώπης, σ.12

also use gas as their primal energy fuel, increasing that way EU's dependency. Furthermore, Western Europe itself has increased gas consumption in an effort to reduce the use of coal.[22]

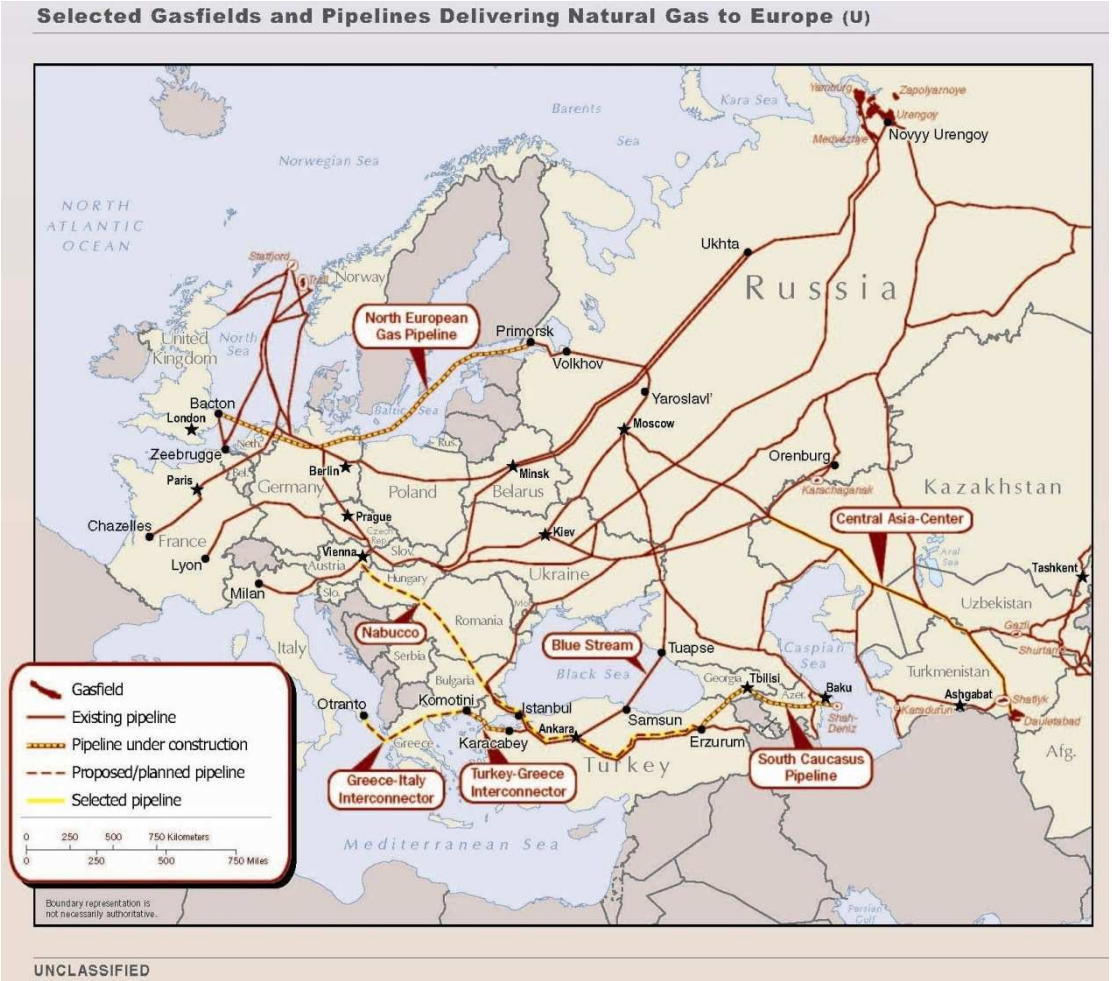


Natural gas consumption in EU-27

Natural gas is the basic energy fuel in Europe and the main energy partner is Russia. While oil market is wider, gas markets are primarily regional[23] thus increasing the dependency from a single country. As mentioned previously EU promotes the liberalization and the diversification of energy markets. It is believed that through policies based on these principles EU will be able to obtain the gas needed without risking to be in absolute dependency from Russia. In its effort to do so, EU fails to notice some very important things. First, the energy market liberalization is something that may work for Europe but it is not in any case in the interest of Russia. So, the constant press towards Russia to adopt the same policies as Europe is not only unrealistic but also irritating. Some of EU member states seem to have realize it and act independently, strengthening their relations to Russia through energy partnerships. Secondly, it is believed that through diversification in energy supply, Europe will be able to enhance its energy security.

[22] ibid
[23] Filippos Proedrou, *EU energy security and Russia: a re-conceptualization of threats and policy priorities.*

Russia is the main energy supplying and transporting country and this doesn't change. Energy sources of other countries in the Caspian basin or Central Asia can't be exploited without Russian interference. Moreover the search for alternative sources does not come to fruition. Liquid Natural Gas (LNG) and shell gas, cost too much[24] in comparison to the traditional natural gas for which pipelines already exist.



European natural gas network, www.iea.org

Another factor that EU should keep in mind when trying to disconnect from Russia is that is not its only customer, since developing countries of Asia increasingly demand more oil and gas which hope to get from Russia.

[24] Γιώργος Πρωτόπαππας, *Η Ευρώπη αναζητά νέους ενεργειακούς δρόμους*, Ο Κόσμος του Επενδυτή, 7-8/8/2010

Moreover, researchers believe that in few years Russia may have problem in supplying its domestic market[25]. Europe can't easily find alternative energy sources[26] and for that it should reorient its policies towards more realistic options.

Regarding the need for energy stocks, EU has developed mechanism capable of dealing with interruptions in energy supply, such as those in 2006 and 2009.[27] A series of reasons[28] has led EU to hold oil stock supplies and form a strategy that obliges member states to maintain transparency in their energy transactions.[29] Such policy is useful but it can be effective only when combined with complementary measures such as energy efficiency and reduction in the use of hydrocarbons.[30] Unfortunately, in the gas sector things aren't that optimistic. Maintaining gas stock supplies is more expensive than in the case of oil and not all countries have the ability to do so due to their geology.[31] Nevertheless, IEA along with EU are working hard in finding ways to improve natural gas security.

2.5 The energy identity in SEE

2.5.1 Emerging energy questions

The energy resources of Asia and their export in the markets of Europe and West in general, is an issue that has always been in the list of priorities of the Western countries. The creation of new independent states after the dissolution of USSR brought up the question of the exploitation of the energy

[25] Α.Ανδριανόπουλος, *Ενεργειακή Ασφάλεια και Διπλωματία των Αγωγών,* www.andrianopoulos.gr
[26] ibid
[27] In both cases Russia interrupted the gas supply towards Ukraine creating problems to Europe as well.
[28] Such as the importance of oil in the energy mix, EU's strong external dependency on petroleum products and the geopolitical uncertainty in many producing countries
[29] ibid
[30] ibid
[31] ibid

supplies of the Caspian Sea. This new reality posed serious questions about the control of these energy sources and the energy roads to the West[32].

In the past decades there has been a redistribution of power in the energy arena. Now smaller countries such as south eastern European countries have to define their role. Who controls the energy sources, what is the role of smaller regional players and what is the importance of the Caspian as an energy basin are some questions to be answered. One should keep in mind that we talk about a huge region that concentrates one of the world's biggest known oil and natural gas resources.

2.5.2 The Russian factor in Europe's energy security

Russia is one of the most powerful countries in the world in the energy field and Europe's most important energy partner. Using its rich energy resources and Putin's entrepreneurial politics, Russia managed to overpass its post-soviet decay and re-emerge as a dominant power in world affairs. To do so, the Russian government used questionable methods and means that didn't fit to the liberal market model of economy.[33] Hence, the result was rewarding for both its economy and its status. Having realised that the world economy lies on energy and that modern politics are conducted based on geoeconomy[34], Russia used its natural wealth to prevail in the energy market.

Russia has found itself in the control of sources significant to the global wellbeing. The whole region of Central Asia is known for the rich energy resources but since part of it belonged to the once united USSR, all means of transportation pass through Russia. So the latter inevitably controls those deposits. This has consequently influenced Russia's attitude towards Central Asian countries and the rest of the world.[35] Now Russia not only controls

[32] Ibid, p.2
[33] Andreas Andrianopoulos, *The Russian factor in Europe's Energy Security*, Conference on Black Sea Security Issues
[34] Ανδρέας Ανδριανόπουλος, *Ολοκληρωτικός Πόλεμος για την Ενέργεια,* Εκδόσεις Libro, Αθήνα 2006, σ.11
[35] ibid

energy sources but also the energy passages of other countries while it has the status of a serious and safe country capable of guaranteeing the secure supply of energy.

As an oil and gas producing country and having control of the energy routes, Russia claims to be in position to satisfy Europe's energy needs. Indeed Europe seems to also believe so since many European countries (Germany and Greece among them) have a closer partnership with Russia in the energy sector. Nevertheless, Russia's dominant position in the energy market along with the harsh politics it uses, troubles Europe. Last winter, which was exceptionally cold, Russia showed its power in the dispute with Ukraine. A two-part problem (between Russia and Ukraine) turned to a major energy crisis and a headache for Europe. For that, some believe that Russia isn't as a reliable partner as it seems to be[36] and some even speak of a new Cold War regarding energy. This opinion is based on Putin's tough politics and questionable practices that do not follow the western type model of democracy.

Undoubtedly, the phenomenon of acute energy anxiety and the run of sufficient resources have raised the hopes of Russia for energy dominance and prosperity and fears of dependency to Europe.[37] Hence, as Kremlin claims, Russia even in the Soviet era had never failed to fulfill its gas supply obligations to the capitalists European West.[38] This is true and what is also true is that the energy dependency is a bilateral relationship. Europe needs Russia to survive but the latter also needs Europe to gain money. Russia must sell gas in order to satisfy its domestic economic goals and to fortify

[36] Bruce Pannier, *Kazakhstan: Prodi visit eases strain over major oil venture,* www. Andrianopoulos.gr
[37] Andreas Andrianopoulos, Russian *Energy Diplomacy and the South East European Response,* www.wilsoncenter.org
[38] Andreas Andrianopoulos, *The Russian factor in Europe's Energy Security*, Conference on Black Sea Security Issues

Gazprom's position.[39] So worries about a revengeful Russia that cuts off the supply to Europe are rather unrealistic.

2.5.3 The Black Sea and the Caspian states parameter

2.5.3.1 Energy resources in the Caspian Sea Region

The estimations regarding the energy dynamic of the Caspian Sea region vary. Some believe that it is equivalent of this of the Persian Gulf[40] while others less enthusiastic find Caspian Sea resources a good alternative to the Middle East deposits. To better comprehend the wide range of the estimations on the importance of the Caspian energy sources it is necessary to define this area. It is a huge region that includes not only the Caspian Sea but a broader territory with many countries.[41] Despite that, the comparison to the Persian Gulf is rather optimistic since the sources of the latter are extremely while a big part of the former is still undiscovered.[42] In any case it is better not to exaggerate on the size of the Caspian energy deposits. There is a major difference between the already known deposits and those that it is believed that can be discovered.[43] Sometimes it is not even clear how the latter can be found and be brought to surface. Nevertheless it is believed that in the Caspian basin there are about 200 billion barrels of oil and 10-18 trillion m^3 of natural gas.[44]

[39] Ανδρέας Ανδριανόπουλος, *Ολοκληρωτικός Πόλεμος για την Ενέργεια,* Εκδόσεις Libro, Αθήνα 2006, σ.65
[40] Δημητρουλάκη Κωνσταντίνα, ο ενεργειακός χάρτης της Μαύρης Θάλασσας, ο ρόλος της Ευρωπαϊκής Ένωσης και της Ελλάδας, διδακτορική διατριβή, Πανεπιστήμιο Μακεδονίας, 2006, σ.16
[41] Russia, Kazakhstan, Turkmenistan, Iran and Azerbaijan, all have share in the Caspian Sea
[42] This means that once discovered they would be either bigger or at least equal to Persian Gulf's resources or nothing significant.
[43] Ανδρέας Ανδριανόπουλος, *Ολοκληρωτικός Πόλεμος για την Ενέργεια,* Εκδόσεις Libro, Αθήνα 2006, σ.22
[44] Δημητρουλάκη Κωνσταντίνα, ο ενεργειακός χάρτης της Μαύρης Θάλασσας, ο ρόλος της Ευρωπαϊκής Ένωσης και της Ελλάδας, διδακτορική διατριβή, Πανεπιστήμιο Μακεδονίας, 2006, σ.16

The demand for energy is constantly increasing while the global energy production suffers from reduction or even stagnation. It is estimated that the demand on oil and gas will continue to grow by 2% per year while production is only 1% annually.[45] This happens mainly due to the big growth rate of the developing Asian countries such as China and India. Russia already faces decrease of its gas imports when it is almost certain that that it will have problems in its energy supply obligations towards its energy partners.[46]Consequently, the energy sources distribution terms have changed and every possible energy deposit is not only useful but extremely valuable.

Another factor that makes Caspian Sea important is its geography. Its location allows the supply of many countries to the West and to the East through the use of pipelines. On the other hand drilling oil it is an extremely difficult and costly process both in economical and environmental terms. To extract oil from the Caspian Sea it is necessary to use platforms that have a huge cost and can be proved highly damaging for the water life in case of a leakage. Furthermore the legal status of the transportation through water, which is the way of transfer to the West, isn't yet clear. [47]

The largest oil sources of the region are in Caucasus and Azerbaijan[48], but they still remain smaller than these of Russia or Persian Gulf. The entire oil and natural gas deposits are very important but they are only capable of sub placing and not replacing the sources of the Gulf.[49]However the energy demands of the EU and USA continue to rise and the international diplomacy of security energy requires the existence of many energy producing countries capable of supplying energy whenever needed. For that, the deposits in the Caspian Sea region are of high value and importance.

[45] Ανδρέας Ανδριανόπουλος, *Ενεργειακή Ασφάλεια και Ελληνική Μακαριότητα* , www.andrianopoulos.gr
[46] ibid
[47] Ανδρέας Ανδριανόπουλος, *Ολοκληρωτικός Πόλεμος για την Ενέργεια,* Εκδόσεις Libro, Αθήνα 2006, σ.24
[48] The energy sources of these countries are being exploited by state and private companies with a large share to foreign oil companies such as BP, Exxon Mobil, Texaco, Chevron etc
[49] Ibid

2.5.3.2 The Black Sea Region importance to EU

The Black Sea Region is connected to the energy security in SEE due to its geography and politics. It is a major transport passage of oil and gas coming from the Caspian basin to Europe and since Bulgaria and Romania accessed NATO in 2004 and EU in 2007, it has become the new eastern frontier for those two organisations.[50]

Energy security is a priority to EU's foreign policy agenda and the fact that most energy routes pass from the Black Sea region makes the latter important for the EU. Black Sea's location has a strategic character since it connects Europe to Russia and the Caspian. Countries in the Black Sea region are engaged in energy politics but not always in a positive way. Energy has frequent become an issue of controversy with most recent example the conflict between Russia and Georgia in August 2008. The political instability of the region and the determination that Russia has shown to respond to disagreement, even military, increases EU's concern about the safety of its energy supply.

Following the principle of diversification, Black Sea region has come to the interest of EU. It is believed that the development of new energy routes that could pass from Black Sea bypassing Russia could increase Europe's energy security. Working in this direction, EU has focused in the construction of new pipelines that could cross other countries but Russia.[51] Those projects are supported by EU and US and their goal is to safely transport gas and oil from rich energy countries to Europe by overriding Russia and other unsafe or unreliable countries such as Iran. On the other hand though, such projects have an enormous cost and require coordination and agreement among many countries that do not always have good relations. In addition most of the supplying countries are dependent on Russia in political and economical

[50] Sohbet Karbuz, *Losing the energy battle:how and why the US and EU need to engage the Black Sea Region.*
[51] For an analysis see ibid

terms. But the most serious factor that makes such alternative projects rather unrealistic is the scarcity of gas. Gas is not endless and the more those pipelines are postponed the most likely is that they will not find any gas left in the future[52]to make them operative.

3.Western Balkans policy in energy

3.1 energy security policies

The Western Balkan region is strategically located between regions rich in hydrocarbons (Russia, the Caspian basin and the Middle East) and key energy-consuming regions of Western and Central Europe.[53] In this respect, the region can play a significant role in the future transportation of oil and gas. In order to consider the Balkan region as a context, this chapter will present briefly the energy policy and more particularly the energy security of Western Balkan countries. Overall, three things are very important for the regional energy security: the development of new energy routes, the operation of routes already under construction; and the diversification in energy supplies as a total.

3.1.1 Serbia

Before the turning of the 20th century, Serbia's energy industry has suffered much from the NATO bombing and the economic embargo. It had to carry the burden of sustaining the economy and society in a very difficult period. [54] In those times, the high rise of import dependence on oil and gas resulted in the change of the energy consumption structure.[55] Nevertheless, the energy

[52] ibid
[53] *Energy in the Western Balkans, the path to reform and reconstruction*, p. 71, www.iea.org
[54] www.serbiaenergy.com
[55] ibid

sector in Serbia, has considerable development potential, and could play a key role both in future energy transit and in regional energy market. [56]

Serbia's most important energy source is lignite that is used mostly in electricity and in domestic energy production, contributing in the self energy sufficiency of the country. However, the quality of the available lignite is poor with the total cost of its mining exceeding its overall benefits. Furthermore, the production of lignite has significant environmental costs as it is responsible for a quite high percentage of dangerous gas emissions, water and soil pollution. All these indirectly affect the social environment as well and of course the country's economy. Hence, Serbian energy policy continues to focus on the lignite as a primal source of energy.

In the electricity sector Serbia's total generation capacity is 7.1 GW, with 2/3 of it coming from thermal power and 1/3 from hydropower. Nevertheless, Serbia still has to import electricity to cover its seasonal needs.[57]this happens due to the law efficiency of the lignite and the high losses of transmission and distribution.

In the field of oil Serbia doesn't have a strong production or the means to be competitive. While Serbia's overall energy import dependency is moderate at 32%; its imports reach 85% of its crude oil and natural gas needs. The domestic oil production has been in decline since 2001 whole the storage capacity was destroyed during the war without being able to revive till today. The two oil refineries were also severely damaged with their efficiency standing below the European standards. Besides that, Serbia has to face the smuggling of oil and oil products that is mainly due to the low oil quality.

Things in natural gas seem a little more optimistic. The dependence on foreign services for gas storage tends to reduce thanks to the recent funding

[56] *Energy in the Western Balkans, the path to reform and reconstruction*, www.iea.org
[57] Ibid, p.331

from the EBDR in order to construct a new state owned gas storage. This is part of a greater energy project that will upgrade Serbia's gas transmission network[58] and will enable it to be competitive and less dependent and more secure in terms of energy supply. On the other hand, natural gas security of supply in Serbia, at the moment, depends on a single supplier (Russia), while the supply is done via a single supply route. Russia has a total share of 87% in Serbian energy market[59]. Despite the fact that the usage of natural gas is not that widespread in Serbia, the recent sale of oil and gas infrastructure to Gazprom – Serbia's sole natural gas supplier – raises concerns about the long-term impact on Serbia's energy security and market opening.[60]

In the renewable energy sector Serbia does not have much to show. The only energy source in this category is hydropower, which accounts 33% of the energy mix. Solar, thermal and wind power are not even in the agenda of Serbia's energy policy mainly because of the law competitiveness the present since the current electricity tariffs are very low. Geothermal potential is limited because there is no systematic official approach while the same stands for biomass which is only promoted by the private sector. Fuelwood, which is also considered as a renewable energy source, is widely used in Serbia especially in poorer households. However it is a fuel of law energy efficiency that combined to the old type wood stoves does not produce a sufficient energy effect.

Overall, Serbia annually produces around 35 billion Kh of electricity coming mostly from thermal and hydro power plants. The quality of coal is low and the coal stock is estimated to last for another 50 years, while it is estimated that the need for electricity will be doubled.[61] The usage of natural gas is limited

[58] Ina Coretchi, *New gas storage in Serbia, EBDR boosts energy security in SEE,* www.ebdr.com
[59] Serbia and South Stream, www.eurasiareview.com
[60] Energy in the Western Balkans, the path to reform and reconstruction, www.iea.org
[61] Dragan Obranovic, *Nuclear power plants:a real solution for Serbia,* 06/10/2010, www.energetika.net

and the oil production is neither qualitative nor sufficient. For that some consider the development of nuclear plant as a good solution in Serbia's energy problem. Nevertheless this is far from realisation since Serbia has just recently rejected its participation in Bulgaria's Belene project.

Energy security is a high priority for Serbia. This concern is reflected in the Serbian Strategy plan for energy till *2015* that, among others, focuses on the diversification of energy sources and imports, product supply. Another key objective of Serbia is the capital-intensive investments in new energy sources, and in strategic energy projects (*such as South Stream*) at the domestic, regional or pan-European level. Such investments would provide new and alternative capacities for electricity supply, ensure diversification of the sources of supply and of transport routes for oil and gas, and promote integration into regional and international infrastructure systems[62].

Serbia's high energy import dependency on crude oil and natural gas has forced it to make an energy strategy plan that would help improve its energy security. Serbia depends mainly on Russia that is its major energy supplier and owner of the supplying companies. Furthermore Serbia imports fuel to cover seasonal demand fluctuations. Therefore, reliability of the fuel supply and related services is a critical factor in overall energy security. The establishment of public strategic oil stocks and an emergency preparedness system are of key importance.[63]

In the absence of robust regulatory structures, the fact that a single country might control the major part of oil, gas or electricity assets in a market reduces the likelihood of developing market-based approaches to energy policy.[64] In the case of Serbia this only stresses the need to develop its legislative and

[62] ibid
[63] ibid
[64] Ibid p.322

regulatory structures and follow an energy strategy that would enable it to have other energy partners besides Russia.

3.1.2 Albania

The energy sector in Albania, like in most former communist countries, has suffered during the transition period from a central to a market based economy. The most pressing challenge it faces is the lack of domestic capacity for thermal electricity generation[65]and the almost absolute dependence on hydropower for the production of electricity. Besides that, Albania presents a weak image in other energy sectors even in those that were used during the communist era, like lignite and natural gas.

Albania has large quantities of lignite located in four basins around the country. However, the quality of it is low, its composition hazardous for the environment and the cost of mining higher than the offering benefits. Coal consumption is limited to industries that seem to prefer better quality imported coal. Natural gas was also once used but now consumption as well as production are quite limited. Investments in the natural gas sector have declined since the 80's and the country remains cut off from the regional gas network.

Things in oil are not that optimistic either. Albania's oil reserves were able to cover around 1/3 of its needs but not any more. The domestic crude oil is of low quality and of limited usage. Furthermore the state refineries are designed in a way that prevents further process and import of foreign crude oil. The result of is the flourish of smuggling in the quest of better quality oil and oil products and the gradual decline of the oil infrastructures. The building of a competitive oil future would require a lot of money that no one is willing to

[65] Ibid, p.140

invest. Instead, Albania is turning to oil product imports and to LPG[66] consumption as a cheaper and more effective way to supply with energy. Hence, oil products hold the first place in the country's energy mix.[67]

The demand for electricity in Albania is constantly rising with households processing 72%, industries 2% and services 2% of the total electricity consumption.[68] This is mostly due to the fact that electricity tariffs and payment discipline are very low. Electricity in Albania heavily relies on hydropower plants and that causes many disruptions in the transmission of energy during periods of draughtiness. Moreover the losses of energy during the transportation are high.

Hydropower and fuelwood are a big part of Albania's energy mix but these are rather conventional forms of renewable energy. Fuelwood along with biomass have a large potential of development in Albania but nothing is being done for it. Solar and wind power can also offer much to Albania's energy mix but the government has not still deployed an energy strategy that would include these forms of renewable energy.

From that, it is easily understood that Albania is far from having an energy strategy that will secure the future of its energy supplies. The country has been slower in developing its long-term energy policies and strategies for energy security and efficiency and in creating the appropriate institutions to implement sustainable reforms of energy markets than most countries in Central Europe and the Baltics[69]. It still needs to develop sufficient energy strategies and reliable data systems in order to reach market fundamentals and diversify its energy mix.

[66] LPG stands for Liquefied Petroleum Gas which is an alternative and cheaper energy product.
[67] Ibid, p.142
[68] Τσελεγκαριδου Δ., Χατζηθεοδωρίδου Α, *Διερεύνηση ενεργειακών πολιτικών στις Βαλκανικές χώρες, Α.Π.Θ.,Θεσσαλονίκη 2009*
[69] Energy in the Western Balkans, the path to reform and reconstruction, www.iea.org

3.1.3 Croatia

Croatia is in a far better position in the field of energy than other Balkan countries. Having a good economy Croatia has managed at an early stage of the energy reform process to adopt and solid and broad energy policies focused on energy security, energy market opening and sustainable energy development. [70] Furthermore, the administration in Croatia has a high level of expertise that enables it to implement effectively an energy strategy.

Over the past decade, Croatia has set energy security as a priority. The Croatian primary energy mix is comparable to most European countries.[71] The country has a high dependence on hydrocarbons with oil playing a dominant role, while the imports of crude oil are expected to rise. In the sector of renewable sources Croatia depends on hydropower and fuelwood that cover a significant percentage on country's electricity and heating needs. Besides that, Croatia's windy coasts offer a great environment for the development of wind power units. Furthermore other renewable energy sources such as geothermal and biomass also show great potential. The development of other energy sources besides oil and natural gas is friendlier to the environment and help Croatia increase its energy security.

Croatia already implements diversification in the supply of energy and therefore in the energy routes. Most of its supplies come from Russia and the Mediterranean basin and the majority is transported via maritime routes to Croatia's two domestic oil refineries.[72] In the case of natural gas though, Croatia's supplies come from a single country (Russia) through a single supply pipeline. Despite its domestic resources, Croatia is increasingly dependent on oil and gas imports. For that it plans to maintain the

[70] Ibid, p.195
[71] Ibid, p.209
[72] Ibid, p. 210

diversification policy and further enforce it even by using other energy sources such as LNG.

Croatia promotes the establishment of an oil security system that will rely on a mix of public stocks (held by a state agency) and privately held industry stocks. This has been a move in accordance with EU policies that added strength and credibility to the country's oil security system.[73]As for security on gas supply, estimations show a decline in domestic production but a steady increase in demand. So Croatia needs to improve its energy strategy and enhance its energy security policy, especially in the field of natural gas.

3.1.4. FYROM

Having inherited its energy system from the Socialist Federal Republic (SFR) of Yugoslavia,[74] FYROM found itself facing the challenge of reform. The overall energy import dependence of FYROM is 45%; but it is 100% dependent on imports of crude oil and natural gas. Its entire natural gas systems rely on Russia which is its single supplier while there are no gas storage facilities in the country.[75] To improve the situation in the energy sector FYROM has made major efforts to attract foreign investments. At present the private capital dominant in this field.

Besides oil and gas FYROM relies heavily on the domestic production of lignite for electricity generation. The extracted lignite is low in quality and calorific value but the country still gains from it in terms of energy security since it has not developed alternative energy sources. Fuelwood in FYROM is also of low quality hence it represents a large share in the country's energy mix. Other renewable sources are not developed nor the have he potential to be so.

[73] Ibid p.211
[74] Ibid p.239
[75] Ibid

FYROM has set energy security as a priority and has used regional energy integration as a tool to achieve it. The country works on creating the institutional capacity and financial resources needed to develop oil and gas interconnections with its neighbours. Towards the same direction FYROM wants to create a sufficient stock of oil supplies similar to these EU. Nevertheless it lacks the institution that would have the authority to control and supervise those strategic energy stocks.[76]

Having realised its weaknesses in the energy sector, FYROM tries to make the best out of what it has. A key goal in its energy policy is to ensure energy security at the lowest possible investment cost. FYROM has limited domestic sources but increased energy needs that need to cover in a low cost. Meanwhile it needs to develop reliable infrastructure that will support the energy sector.

3.1.5. Bosnia and Herzegovina

The energy sector in Bosnia and Herzegovina, like in the rest of the states of the former Socialist Federal Republic (SFR) of Yugoslavia, has suffered from the war conflicts of 1992-95 but unlike the latter it showed slow recovering rates. The war caused many damages in the infrastructure and in the future development of the energy sector, but the most important failure of the independent state of Bosnia and Herzegovina was the inability to develop the necessary institutions to deal with the energy problem. This directly affects the progress in the energy field and holds back even energy sectors that did well during the war, such as electricity.[77]

[76] Ibid , p.250
[77] Ibid, p.157

Besides the institutional problems, the country still faces three main challenges in the electricity sector: to complete its rehabilitation, to diversify its energy mix and to comply with EU environmental standards.[78] Moreover, another problem it has to deal with is the low electricity prices that are not cost reflecting and stand as an obstacle to the development of other energy sectors such as solar power.

In general the renewable energy sector is underdeveloped while at present only two main renewable energy sources are developed, those of hydropower and fuelwood. Both these forms of energy, contribute to the country's energy mix but unfortunately they also face problems in developing further. Environmental reasons and irrational usage along with the lack of regulatory system have set barriers in the development of this particular energy sector, depriving the country from a more effective and diversified energy mix.

Now, in the oil sector Bosnia and Herzegovina has only one refinery that suffered major damages from the war and wasn't able to operate till 2006. Through this time the market was fled with low quality oil products from the neighbouring countries and still suffers from smuggling and tax evasions. Oil reserves in Bosnia and Herzegovina are estimated at 50 Mt and have not been fully exploited.[79] Natural gas on the other hand, accounts a small share of the energy mix, due to the limited distribution network, the fragmentation of the infrastructure, and the lack of coherent legal frameworks for investment and operation. Nevertheless the pipeline capacity is well above the gas consumption.

Bosnia and Herzegovina's energy import dependency is relatively low (38%) due to the domestic production of coal, fuel wood and hydropower. Nevertheless, the country is 100% import dependent in terms of oil and gas –

[78] Ibid, p.184
[79] Ibid, p.174

and the demand for energy supplies is constantly increasing. Regarding the transportation routes, they are diversified in case of oil products (Bulgaria, Croatia and Serbia), while for natural gas; Bosnia and Herzegovina relies solely on Russia.[80]

In the field of energy stocks, Bosnia and Herzegovina doesn't have a sufficient energy strategy. Stocks of oil products and coal are operational, but there are no regulations on minimum stock levels. Furthermore, the country has no gas storage facilities. The lack of a comprehensive energy policy and structured institutions in Bosnia and Herzegovina has led to a lack of focus on energy security and efficiency. Unfortunately, there is an absence of policies and institutions to focus on these issues, but luckily it is the only country in the Western Balkan region in which this is the case.[81]

3.2 Major energy players in South Eastern Europe

3.2.1 Greece

The energy field is something Greece takes under serious consideration. This is obvious from the targets it sets and from the actions it takes. Greece's priority in the energy policy is the finding and management of energy resources in such way that the safe flow and continue coverage of energy needs will be secured.[82] Greece aims to do that for all its citizens and with the best possible terms. In addition, aims at the creation of energy stock supplies, in the building of co operations and in the discovery of alternative ways for the coverage of the domestic energy needs in periods of crises. This target will be further empowered by the application of mechanisms capable of facing sudden destabilising phenomena. One of the main goals of Greece's energy policy is the vital and sustainable development of the energy field in every

[80] Ibid, p.173
[81] Ibid, p.174
[82] www.ypekagr

sector; from the production to the final use. All these always implemented in respect to the natural environment.

Greece aims at the creation of several energy routes in order to reduce its dependency from a single supplier. For that it promotes the creation of projects and co operations with multiple energy partners. In addition it targets at the possibility to use other energy resources that Greece already has[83] along with the development of Renewable Energy Sources (RES).

One of the main goals of Greece is to be able to face the increasing demand of energy supply and the high dependence of energy.[84] Greece has one of the highest per capita consumptions in Europe[85] (45000b/d) while it spends around 15b €/year only for oil imports. To achieve all that Greece tries to respect the European directives and works towards the shaping of the necessary regulatory and law environment

Greece is part of the Balkans, a region with special geopolitical position. In the energy transportation, Balkans hold an advantageous position between the producing countries of Central Asia and the consumers i.e. the European countries. Based on that, the Balkan Peninsula has a significant place in the energy roads as they were designed in the two past decades[86] Greece is aware of that and tries to participate in the energy investments of the area claiming a share to the Caspian oil and gas reserves. At the moment there are six energy projects under construction in SEE, which pass through Balkans. Greece participates in half of them and that shows the significance of the projects for this country and the serious commitment of Greek governments to provide energy supplies to Greek people. The vivid participation of Greece in

[83] Greece is estimated to have a rich storage of underground resources. There are discovered oil deposits in the Prinos fields while there are more to be discovered in the Aegean Sea in the borders to Turkey.
[84] Greece imports 95% of the energy quantities it consumes
[85] 60% of the oil consumption goes on transportation needs
[86] Κ. Μπουτέλης, μηνιαίο δελτίο Φεβρουαρίου 2010, Ομάδα ΝΑΕ, Κέντρο Ρωσίας, Ευρασίας & ΝΑΕ, σ.11

the running energy projects also notes its will to act as an important regional player.

Greece participates in the construction of oil and natural gas pipelines that have been found as economically viable projects. This means that there is a capable quantity of resources to justify their construction. In particular, Greece is part of one project about oil i.e. the Burgas-Alexandroupoli Pipeline (BAP) that is transporting oil from the Black Sea to Aegean and the Mediterranean, through Bulgaria and Greece and of two projects regarding natural gas. The first one is the TGI project that brings gas from Azerbaijan to Italy via Turkey and Greece and the second is the South Stream Pipeline(SSP), that brings Russian natural gas to Italy and Central Europe via Bulgaria, Greece, Serbia, Slovenia, and Hungary[87].

Greece's participation in the planned energy projects is of vital importance for its energy security. Besides the enhancement of its importance as a regional energy player, that Greece hopes to succeed, it has to face other more important and immediate issues such as its huge energy dependency. Greece is one of the most energy depended countries with oil reserves of just 7 million barrels[88] and a very small oil production in comparison to its consumption. Greece has a domestic production of 6400 b/d while its energy consumption reaches 45000 b/d. for that Greece relies on energy imports from Russia, Iran, Saudi Arabia, Libya and Egypt. Over the last few years Greece is trying to reduce its oil dependency by introducing the use of natural gas. Nevertheless that doesn't reduce its energy dependency as a whole since it has negligible amounts of natural gas.[89] Hence, Greece plans its energy strategy based on the diversification principle. It tries to have both multiple energy partners and variety in its energy mix.

[87] www.energy.eu
[88] According to 2006 Oil and gas Journal estimates, www.eoearth.org
[89] www.eoearth.org

In order to achieve its energy targets Greece doesn't only act inside the EU framework but also as an independent country. Greece as a member of BSEC enjoys good relations and cooperation with the oil and natural gas producing countries of the Caspian, further enhancing its role in Europe. Furthermore, Greece takes advantage of its position among other Balkan states by creating business cooperation in the energy sector. Greece is the major investor in the former Yugoslavia and has an active presence in the Balkan area, through the Greek energy industry.

Besides the effort Greece is putting into improving its energy security, there are some that believe that Greece does not have a serious energy policy.[90] Instead Greece presents a serious weakness in deploying an effective energy policy that would allow both to secure its future energy supply and to deal with crisis in the oil prices. Greece needs to obtain a long term strategy that would enable it to lessen its energy dependency. Greece belongs to the countries that have a great level of energy dependency and the problem with oil is not only in the high prices nor in the huge cost of drilling. The issue is the difficulty in finding oil[91] and since it is a scarce commodity, Greece should act fast in accordance not only to European policies but to its own national needs before it is too late. Overall, Greece has the assets not only to act as a major player in the Balkan area but to become Europe's linkage to the Caspian sources and secure its own energy future.

3.2.2 Bulgaria

Over the last years Bulgaria has been constantly increasing its role in the energy map of SEE. In the Balkan area, Bulgaria has always been a pioneer in the field of energy, especially in nuclear power and also in electricity, where

[90] Ανδρέας Ανδριανόπουλος, *Ολοκληρωτικός Πόλεμος για την Ενέργεια,* Εκδόσεις Libro, Αθήνα 2006, σ.45
[91] Ibid, p.46

is the major energy producer and exporter[92]. Lately it has been putting serious efforts in developing other means of energy supply by participating actively as a transit country in SEE region. This goal has been further enhanced by the accession of the country in the EU and NATO.

The obligations deriving from these two organisations gave to Bulgaria's energy strategy a new perspective oriented in specific targets. Among them is energy security that respects environment and protects from the side effects that energy's production and use causes. Bulgaria, even before being part of EU and NATO, has always been preoccupied with energy. The country is located in an advantageous position having the role of mediator between the energy sources coming from Russia, the Black Sea and the Caspian and other Balkan states and ultimately Western Europe. Although Bulgaria is not very rich in natural fuels such as coal, oil and gas, it has developed its energy sector in a great extend.[93]By taking advantage of its strategic geographical location that makes it a hub for transit and distribution of oil resources,[94] Bulgaria is in position of playing an important role in the energy security of the whole SEE region.

Bulgaria has set, among others, energy safety as a priority. The diversification of the energy supplies and the constructions of the necessary infrastructure are EU goals that Bulgaria has put into practice. The latter, actively participates in the Balkan area planned energy projects. It is a transit country for Russian natural gas to Turkey, Greece and FYROM and participant to the new Nabucco and South Stream pipelines.[95] Furthermore, Bulgaria is a partner in the construction of the AMBO and the Burgas-Alexandroupolis pipelines.

One of the reasons that Bulgaria has taken energy security so seriously is that it was part of the EU's energy policy that Bulgaria had to follow in order to

[92] http://en.wikipedia.org
[93] Ibid
[94] Ibid
[95] Ibid

integrate. For that it works hard and has developed an energy plan till 2020.[96] In full respect to EU's demands, Bulgaria works for strengthening the solidarity among the member states by following EU's energy strategy in energy security. It promotes the increase of the stock of liquid fuels and the diversification of energy supplies. Furthermore, while Bulgaria is a country that traditionally uses other means of energy (i.e. nuclear energy), it participates in energy projects that not only create alternative energy choices for the country itself, but serve Europe as a transit country. As a matter of fact, Bulgaria is a regional transit centre for natural gas. In is the first distribution centre in the Balkans and has already increased its transit capacity by four times.[97]

Energy sector in Bulgaria is quite developed and the country concentrates a series of assets that put it in an advantageous position among other Balkan countries. It is not only the strategic geopolitical and geographical position of the country, as already mentioned, but also the ability Bulgaria has to take advantage of it. Over the years it has developed a cross border energy transmission and transit network[98]that now enforces by participating to new energy projects regarding oil and gas. In terms of energy security, Bulgaria is a step ahead, since it is energy independent by using local coal and nuclear energy and by having a balanced energy mix.[99] Furthermore, it possesses other not utilised energy sources. In that respect, Bulgaria has realised the significance of energy security and acts in advance, with a long term strategy that will allow both the future safety of energy supplies and the ability to act as a major energy player in the Balkan area.

[96] See in www.mi.government.bg , *The energy strategy until 2020, a new vision for the future of energy in Bulgaria.*
[97] *Concept of the Bulgarian energy strategy till 2020*, www.mee.government.bg
[98] Ibid, p.19
[99] Ibid

3.3 Investments in South Eastern Europe

Balkans have always been a unique area with special geography. Their location between the energy production of Caucasus, Caspian and Middle East and the West is very interesting on geopolitical terms. In the post cold war era, Balkans as a regional system could claim their position in the new geopolitical reality[100], attracting investments for new energy projects. Especially now in a challenging period for both the economic and energy sector, energy is a prime issue.[101]

Nowadays, energy in SEE increasingly attracts interest. After along period of turbulences the region finally passed to a period of stability, economic growth and investment chances.[102] Along with the fact that those countries are still trying to stabilize their political status and safety, creates the perfect opportunity for achieving their goal. Through a regional energy market SEE has the chance to enforce its political stability and economic growth.

SEE can act as a regional player in the transportation of energy supplies from production countries of the East to the energy dependent countries of the West. Nevertheless, SEE itself is a dependent region. In order to deter the increase of such dependence, new investments must be made in the energy field, while governments of SEE countries should act towards the promotion of the regional energy integration.[103]

The role of energy is substantial for the economic growth of the area. SEE governments should work in a coordinate way to ensure the energy security and to maintain their active participation in the energy chain. A long term strategy is necessary for the effective use of the energy sources of the area

[100] Μπουτέλης Κ., *Μηνιαίο δελτίο Φεβρουαρίου 2010,* Κέντρο Ρωσίας, Ευρασίας και Νοτιοανατολικής Ευρώπης, σ.11

[101] Πλούταρχος Σακελλάρης, *Επενδύσεις στη ΝΑΕ*, περιοδικό ΤΑΣΕΙΣ 2010, σ.168

[102] ibid

[103] ibid

and its strategic geographical place.[104] Furthermore, a regional market will not only have economic benefits but it will also contribute to the environmental sustainability.

4. Energy projects in the Balkans

Introduction

While the discovery of significant new oil fields in the Caspian Sea is good news for the energy-thirsty Europe,[105] it requires the construction of pipelines that would transfer it to the interested countries. In the energy transportation, Balkans hold an advantageous position between the producing countries of Central Asia and the consumers i.e. the European countries. In addition, the question of energy security has brought attention to the strategic significance of South-Eastern Europe as a transport hub of oil and natural gas and a key region for European energy security.[106] Based on that, the Balkan Peninsula has gained a significant place in the energy roads as they were designed in the two past decades[107]

At the moment there are six energy projects under construction in SEE, which pass through Balkans. Three of them concern oil transportation while the rest are about natural gas. In the chapters that follow they are briefly presented.

[104] ibid
[105] David Johnson, *Politics and Pipelines,* www.infoplease.com
[106] Natural gas corridors in Southeastern Europe and European energy security, www.eliamep.gr
[107] Κ. Μπουτέλης, μηνιαίο δελτίο Φεβρουαρίου 2010, Ομάδα ΝΑΕ, Κέντρο Ρωσίας, Ευρασίας & ΝΑΕ, σ.11

4.1 Oil pipelines

The Bourgas- Alexandroupoli Pipeline (BAP)

The Bourgas- Alexandroupoli Pipeline (BAP) is a 280km long crude oil pipeline; 135km of those are running through Greek territory while the remaining run through Bulgaria. The oil will pass from Novorossiysk (Russia) to Burgas (Bulgaria) through the Black Sea. In the construction of the pipeline the Russian part holds 51%, the Bulgarian part and the Greek partner from 24, 5% each and the Greek state 1%. The total budget of this project is estimated at 750-800million €[108] which is considered a low budget, giving Greece an advantage in comparison to other planned energy projects that pass from Balkan countries. The BAP, once completed, will have the capacity to transport from 35 to 6 million tones of crude oil annually.[109]

The BAP route. Source: www.tbpipeline.com

The comparative advantages of the BAP are very significant. It is a small budget pipeline because it is small in terms of size. The area that the pipeline is designed to pass through it's a safe one. There is no danger in the territory since both Greece and Bulgaria are EU members and in good relations. This makes Greece more appealing to oil producing countries and potential participating partners to invest their money. In addition the ground is good for the construction of such a project while the ecological dangers are limited.

[108] Estimated on 2007 budget
[109] www.mfa.gr

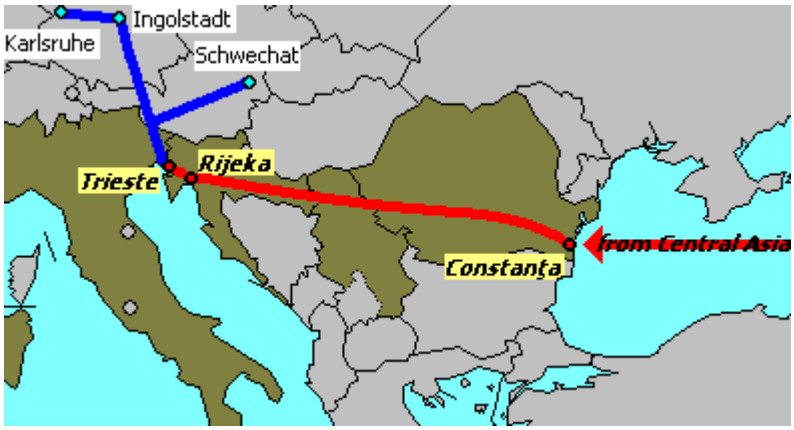
Regarding the environmental protection one should keep in mind that Greece and Bulgaria not only wish to construct the project by minimising any possible environmental implication but they are also members of EU and thus under European directives about the protection of the environment.

The Pan-European Oil Pipeline (PEOP)

In 2007, five southern European countries and the European Commission signed a declaration for the construction of a new pipeline that would transfer oil from the Black Sea to Central Europe.[110] This is known within the European Union as the Pan-European Oil Pipeline (PEOP) and once completed, it will transport Caspian oil the Constanta port of Romania in the Black Sea to Trieste in Italy.[111] From there the pipeline will be connected to other European pipelines that run through Austria and Germany.

The PEOP is a 1856 km long crude oil pipeline with an estimated capacity of 1.2 to 1.8 m b/d.[112] This project is considered of "great strategic importance" by the Commission as it is believed that it would decrease EU's energy dependency on its present suppliers[113] and especially Russia. Furthermore, the project aims at bypassing the Turkish straits transporting oil directly from the Black Sea to the markets of Central Europe.[114]That way it would not only avoid further oil tanker traffic[115] but the environmental risk as well. Turkish straits are too narrow and thus more prone to accidents while they are not capable of transporting large quantities of oil.[116]

[110] Black Sea oil pipeline to start flowing by 2012, 4/4/2007, www.euractiv.com
[111] Feller Gordon, *Critical Pan-European Oil pipeline moves forward,* pipeline gas journal, December 2008, www.allbussinesss.com
[112] http://en.wikipedia.org
[113] Black Sea oil pipeline to start flowing by 2012, 4/4/2007, www.euractiv.com
[114] George Markatatos, *Pan-European Oil Pipeline moves forward,* Pipeline and Gas journal, December 2008, www.allbussiness.com
[115] ibid
[116] Feller Gordon, *Critical Pan-European Oil pipeline moves forward,* pipeline gas journal, December 2008, www.allbussinesss.com



The PEOP route, source: http://wikipwdia.org

The PEOP project is designed to serve Europe in multiple ways. It is not a pipeline that just transfers oil to Europe but one that passes through major European refineries and also one that is connected to other pipelines. Part of the transferred crude oil could be processed in the refineries of either the traversed or the neighbouring countries, while another portion could serve Central Europe by connecting to already existing pipeline networks and crude oil refineries in the heart of Europe.[117] In a constantly increasing energy dependent environment, PEOP concentrates a series of advantages that make the project vital to Europe. The pipeline is routed through politically stable countries minimising supply interruptions and environmental dangers.

Moreover, PEOP provides an important alternative in the supply of European refineries that now are only served by Russia. The pipeline that is planned to operate in 2012 passes through countries with history in the refinery and petrochemical industry. That offers an additional advantage to the project, since experience and safety in the processing of crude oil create a secure and qualitative final product.

[117] ibid

The Albanian Macedonian Bulgarian Oil Pipeline (AMBO)

The Albanian Macedonian Bulgarian Oil Pipeline (AMBO) is a project that involves the cooperation of three Balkan countries, as its name indicates, concerning the construction of an oil pipeline. The project is designed to carry crude Caspian oil to EU and US markets through the Balkans and the Adriatic Sea.[118] More specifically the pipeline begins its route from Bourgas port in Bulgaria, passes through Bulgaria, FYROM, and Albania to the post of Vlore in Adriatic. It is 894.5 km long and is estimated to transfer 30-40 million tones of crude oil per year and it will cost around 1.8m $.[119]

The AMBO overall pipeline route

AMBO pipeline is a rather problematic project since it is being discussed over the past 13 years.[120] Its relatively small transfer capacity, the existence of other energy projects in the Balkan area and most importantly the environmental risks that lie beneath do not create the proper conditions to attract investments. Furthermore, Albania and FYROM lack the necessary

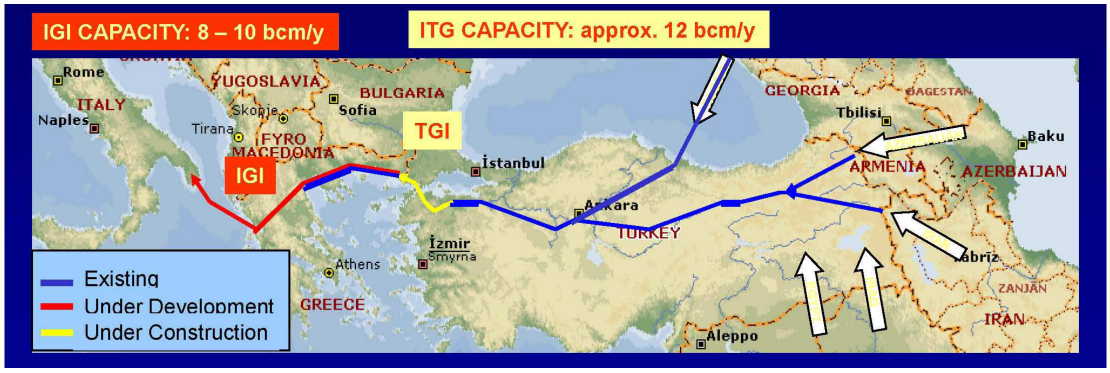
[118] Case study: inland risks from the planned construction and operation of the AMBO pipeline, January 2009, www.bankwatch.org
[119] ibid
[120] ibid

experience in implementing EIA[121] procedures, creating concern about the level of public participation[122] and acceptance.

The AMBO project is calculated that it will have more side effects than benefits. It is a project with questionable economic and social benefits while the environmental implications created from the construction are quite significant. The pipeline is designed to pass from too many protected areas while the whole route of the AMBO is known to be seismically active.[123]In addition the oil delivered from the pipeline is expected to induce more than 100 mt of CO_2 per year, exceeding by far the CO_2 emissions of other Balkan countries.[124]

4.2 Natural gas pipelines

The ITGI Pipeline



Construction plan for the ITGI pipeline

The ITGI pipeline is a major energy project in the natural gas sector. ITGI is connecting Turkey, Greece and Italy. The major supplier of natural gas is Azerbaijan and the pipeline provides natural gas to Turkey, Greece, Italy and

[121] Environmental studies
[122] Ibid
[123] Can the AMBO pipeline make everyone happy? Overview of the project and its potential impacts on the environment, May 2007, www.bankwatch.org
[124] ibid

eventually the rest of the Europe. It is crossing northern Greece across its East-West axis ending in Stavrolimenas. From there it continues through an underwater pipeline to Otrando, Italy.[125]It has a length of 300km out of which 90km are on Greek grounds while 210km cross Turkey. The pipeline's capacity is estimated at 11.6bm of natural gas.[126]This is a quantity of natural gas that is expected to rise. In fact the ITGI is part of a larger pipeline that is going to transfer natural gas from Russia, Caspian Sea and Iran to the West through Turkey, Greece and Italy.[127] For that long term potential the Turkish-Greek natural gas pipeline is very important in the international energy market.

In the international environment, the construction of ITGI was welcomed by the EU and the USA as well[128]. It is the first pipeline that directly connects a supplier country of Central Asia to the consuming Europe and that creates a lot of hopes and expectation for the future. With such a project, European countries can be optimistic about the secure and continuous supply of gas in their grounds. The direct connection to Europe, by overriding Russia, means the reduction of energy dependency of the former from a single supplier[129].

The South Stream Pipeline (SSP)

The South Stream project was originally initiated by the Russian Gazprom and the Italian ENI. On the 18th January 2008 the two companies created in Switzerland the South Stream AG in which they equally participate[130]. Later on other countries joined the project. Now the SSP is planned to pass from Black Sea through Balkans, ending up in Europe. The offshore section of the project will run under Black Sea, from the Russian to the Bulgarian coast.

[125] www.mfa.gr
[126] 15% is absorbed from Turkey
[127] Εφημερίδα «το Βήμα», 9/5/2010, Ανάπτυξη, iv
[128] www.cregreece.gr
[129] Russia holds one of the largest parts of the natural gas European imports.
[130] www.caregreece.gr

From there two possible routes are under review: one north westwards and the other south westwards[131].

More detailed, for the north westwards route it is planned that SSP will go from Bulgaria to Serbia and then to Hungary. The end of the pipeline will be in Austria ending up there with two different ways; first directly from Hungary and Second through Slovenia.[132] Now for the south westwards route, SSP will pass from Bulgaria, then Greece and finally underwater to Italy. From the above one can understand that this is a huge project which concentrates the interest of many countries.

The final length of the pipeline isn't yet decided. The constant changes on its route due to the increased interest of more countries to participate in it, is a factor that doesn't allow a secure calculation about the length. The pipeline's offshore section is estimated at around 900km and with a maximum depth exceeding 2000m, going under Black Sea and connecting Russia to the Bulgarian coast.[133]

[131] http://south-stream.info
[132] Recently Croatia and Bosnia-Herzegovina expressed their interest in participating to the project.
[133] http://south-stream.imfo

The South Stream construction plan

The South Stream project is aimed at strengthening the European energy security. This can be seen by the multiple energy partners in this project and by the high capacity of the pipeline. It is estimated that it will transfer 63billion m^3 per annum, while this can be raised depending on the one hand on the number of the countries participating and on the other hand on Europe's energy demand.

The cost of the pipeline is quite high. It is calculated that it will cost around 20b$. The cost depends on the final length and on the final number of countries that will participate. The storage facilities needed to support the project is a supplementary factor that raises the cost. Another factor reflecting on the cost is the environmental commitments that the constructing parts have made. The route of the pipeline's offshore section will be carefully assessed to ensure safety and to minimize potential impact on the biosphere of the Black Sea[134].

[134] http://south-stream.info

The intended gas will be delivered for the South Stream Pipeline will be delivered by Russia's Unified Gas system. This means that the natural gas will not only come from Russia but from other Central Asia suppliers as well. South Stream will provide natural gas to the market, in appropriate volumes to meet the high demands of the numerous consuming countries. The SSP is a really ambitious project with huge significance both for Russia and Europe. It is initially estimated that it will start operating at 2015.

The Nabucco pipeline

The Nabucco pipeline construction plan

The Nabucco pipeline is a very ambitious project that attempts to supply European energy market with natural gas from Central Asia the Caspian region. Preparations for this project have started in 2002 but it was only until

very recently (6/9/2010) that it received a major financial support by three international financial institutions.[135]

The Nabucco project is developed by the consortium of six companies[136] in which Turkey, Bulgaria, Romania, Hungary and Austria participate. The Nabucco pipeline is designed to transfer natural gas from Erzerum in Turkey to Baumgarten au der March in Austria. It is estimated to reach 3300 km in length and to be able to transport 31bcm/year when operational in 2014.[137]Along the way, the pipeline will be connected to the already existing gas system of Balkans and Europe. What makes Nabucco so important is the size of the pipeline that travels from Central Asia to the heart of Europe. It is estimated that through it, Europe will be able to disengage from Russia which is at the moment the biggest natural gas supplier.

Despite the perspectives of such project, Nabucco pipeline also concentrates criticism about the feasibility of the attempt to bypass Russia. The objective of the project is to connect EU to Caspian and Middle East resources diversifying its current energy supplies. This means that Europe will have to use alternative routes to get natural gas. But those, pas from traditionally unsafe territories such as Caucasus, while the exploitation rights of many sources already belong to Russia. In addition, since it is not the only project in the area, there are serious doubts on the sufficiency of the gas supplies.[138]

Nabucco pipeline seems to have the support of many countries that produce energy with the hope that will have economic benefits from the project. In reality, producing countries didn't prove to be that eager to invest to Nabucco. Till now only Azerbaijan is confirmed supplier[139] but its resources aren't enough. For Nabucco to be operative, more countries need to supply it. But there are already other agreements that commit producing countries to give

[135] Simon Taylor, *Nabucco pipeline gets funding boost,* www.europeanvoice.com
[136] http://en.wikipedia.org
[137] Simon Taylor, *Nabucco pipeline gets funding boost,* www.europeanvoice.com
[138] http://en.wikipedia.org
[139] ibid

their natural gas elsewhere. While the cost of investments is huge it is believed that gas will be transported only through the most commercially alternative routes.[140] Furthermore, none of the alternative passages seems to be attractive enough due to the geography of the territory.

All in all, the Nabucco pipeline will only serve a limited number of countries in South east and Central Europe. For that and for the reasons mentioned there is an unwillingness to invest in the project. One feasible solution is the participation of either Russia or Iran. The participation of the former country is against the reason Nabucco is constructed while the latter's participation faces the strong opposition of US.

Nevertheless, the Nabucco pipeline did receive financial support from the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB) and the International Finance Corporation (IFC). This it is believed to demonstrate the global and the European support for the project.[141] It is both ambitious and doubtful and no one can surely predict what is going to happen.

Conclusions

The combination of the energy problems to the significant opportunities that have emerged after the disintegration of the Soviet Union, gave Balkan countries the chance to structure a strong energy policy. This along with their geographical position among Asia, Balkans and Europe, raises their geopolitical importance.

[140] ibid
[141] Simon Taylor, *Nabucco pipeline gets funding boost,* www.europeanvoice.com

In times of general energy insecurity[142], Balkan Countries and especially Greece and Bulgaria, are proving to be an important link in the energy game. Further more their good relations to Russia and the other supplying countries; also function in a stabilizing way. One thing that is also important is for the regional states to conceptualize the new geopolitical realities and adjust their strategies accordingly. In current geopolitical environment, no individual country of the region can attract enough attention from Western powers to receive guarantees for its security.

All around the world, energy is a vexed question but in Western Balkans both opportunities and threats are even bigger, given the high dependence on oil and the lack of proper infrastructure and efficient legislative system. However Greece and Bulgaria being the most important energy players in the Western Balkans, seem to understand the significance of the energy problem and the advantages they have. Of course there are a lot more to be done but thing is they are set to the right direction.

In the years to come it is estimated that the energy demand will rise, but the energy deposits will remain the same in the best case. The import dependency will rise as well and one can not really thing that self-sufficiency is an easy goal. Instead the reality for most of the countries is rather bad and an energy security policy should be constructed in the basis of diversification in supplies and single import routes and in the reduction of relevant risks.[143]One should also keep in mind the supply interruptions and the need for readiness in case of emergency.

Even if things are not seen with so much pessimism, one should recognize the importance of energy and the eventual need for an energy security policy. Energy is a commodity of high importance not only for economical reasons

[142] There is an estimation that the demands of Europe in energy will continue to rise. For that Europe can not only depend on Russia and M.East but needs to create alternative supply paths.
[143] Nobuo Tanaka, *Security of energy supply in SEE,* international Conference organised by the European Investment Bank, Greece, March 2010, p. 9, www.iea.org

but for reasons of survival as well. That should be enough to convince even the most optimistic or the most ignorant that action should be taken in order to protect the future of energy supply.

Unfortunately the international energy system is progressively characterized by scarcity of resources. Oil and gas are international commercial products with limited deposits. Even when there are known deposits, it is doubtful if they can ever be exploited due to the huge cost of drilling and the great environmental implications especially in marine areas. Every country structures its energy security on the same limited sources and on the same geopolitical foundations[144]therefore it significant for all countries, especially the small ones, to start dealing with the problem in a long term basis by adapting strategies that will allow them to secure their energy future.

[144] Ανδρέας Ανδριανόπουλος, *Ολοκληρωτικός πόλεμος για την ενέργεια,* εκδόσεις LIBRO, Αθήνα 2006, σ.28

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