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TURKEY's PIPELINE STRATEGY AS AN ALTERNATIVE TO EU's ENERGY DEPENDENCY

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AUTHOR DECLARATIONS

1. The material included in this thesis has not been submitted wholly or partially for any academic award or qualification other than it is now submitted.

2. This thesis ,a part of the program of advanced study, is consisted of:

i) Research Methods course during the undergraduate study

ii) Examination of several thesis guides of particular universities both in Turkey and abroad as well as a professional book on this subject.

Ayşenur ŞENTÜRK

August, 2011

ABSTRACT

Ayşenur ŞENTÜRK **AUGUST 2011**

TURKEY's PIPELINE STRATEGY AS AN ALTERNATIVE TO EU's ENERGY DEPENDENCY

Energy is most basic element giving direction to the world of politics, drawing of borders of the countries. Energy consumption is evaluated as indicator of economic development level of the countries. Because of this; governments have to find continuous, dependable, clean and cheap energy and they also have to diversify these sources. Furthermore, the countries should diversify ways of energy.

European Union is the biggest energy importer and it is the third biggest energy consumer after USA and China. EU Countries import their energy needs of ¾ oil, more than 50 percent of natural gas. The important part of import has been taken from Russian Federation. This dependence caused a security supply issue for the Union. Therefore, importance of Turkey's relation with the relevant countries for various pipeline investment and projects will be indicated in this study.

When taking international conjuncture into consideration, it is clear that best regional alternatives for EU are energy resources of Central Asia and Caucasus. In this study it is indicated the importance of security supply as politically and economically in the relation between EU and Turkey. In consideration of ethnical and cultural links with Central Asia and Caucasus, and starting negotiations with Iran Turkey has put clearly that Turkey want to carry forward her "bridge" role to level of determinant. Moreover, in this study, possibility of being HUB where energy trade can be done in will be analyzed more than the role of energy. In this study it will be defended that Turkey should be placed with holding several policies of security supply as powerful in the process of EU negotiations.

Key words:
EU Energy Dependency, Energy Security Supply Policy of EU and Turkey, Pipeline Politics of Turkey, Energy Trade Center (Hub)

KISA ÖZET

Ayşenur ŞENTÜRK **AĞUSTOS 2011**

AVRUPA BİRLİĞİ ENERJİ BAĞIMLILIĞINA ALTERNATİF OLARAK TÜRKİYE BORU HATLARI STRATEJİSİ

Enerji dünya politikasına yön veren, hatta sınırların çizilmesinde rol oynayan önemli bir güçtür. Enerji tüketimi ülkelerin ekonomik kalkınmışlıklarının göstergesi olarak değerlendirilmektedir. Buna istinaden ülkeler sürekli, güvenli, temiz ve ucuz enerji kaynakları bulmak zorundadırlar. Bunun yanında kaynak çeşitliliği yaratıp, enerji güvenliğini sağlamalıdırlar.

AB en büyük enerji ithalatçısı, ABD ve Çin'den sonra üçüncü büyük enerji tüketicisidir. AB ülkeleri petrolde 3/4, doğal gazda ise %50'den fazla ithalat yapmaktadır. Bu ithalatın büyük bir kısmı Rusya'dan karşılanmaktadır. Bu bağımlılık AB için Enerji arz güvenliği sorununu ortaya çıkarmaktadır. Bu çalışmada AB'nin bu ihtiyacın karşılanması konusunda Türkiye'nin çevre ülkelerle gerçekleştireceği çeşitli enerji boru hatları yatırım ve projelerinin önemi belirtilecektir.

Uluslararası konjonktür dikkate alındığında şu anda AB için en uygun bölgesel seçeneğin Merkez Asya ve Kafkaslar enerji kaynakları olduğu görülmektedir. Bu çalışmada Türkiye-AB ilişkilerinde enerji güvenliği konusunun, ekonomik ve politik anlamda önemli olduğu vurgulanmaktadır. Türkiye etnik ve kültürel bağlarına istinaden Orta Asya ve Kafkaslarla ilişkiler ve İran'la yürüttüğü müzakerelerle rolünü "köprüden" çok "belirleyici" seviyesine taşımak istemektedir. Ayrıca bu çalışmada Türkiye'nin bu noktadaki rolünün enerji geçiş yolu olmakla sınırlı kalmayıp, uluslararası enerji ticaretinin yapılabileceği bir "Hub" olma ihtimali de incelenmiştir. Bu çalışmada Türkiye'nin AB müzakere sürecinde elinde alternatif enerji arz güvenliği politikası çeşitliliği ile masaya güçlü oturması gerektiği savunulmaktadır.

Anahtar Kelimeler: AB Enerji Bağımlılığı, AB ve Türkiye'nin Enerji Arz Güvenliği, Türkiye Boru Hatları Politikaları, Enerji Ticaret Merkezi (Hub)

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LIST OF ABBREVIATIONS

AGB: Arab Gas Pipeline

BP: British Petroleum

BCM: Billion Cubic Feet

BTC: Baku Tbilisi Ceyhan Pipeline

CA: Central Asia

EEC: European Economic Community

EIA: Energy Information Administration

EU: European Union

EU-27: Member Countries of EU

EUROSTAT: European Statistical Office, European Commission

EURATOM: The European Atomic Energy Community

GDP: Gross Domestic Product

IEA: International Energy Agency

INOGATE: Interstate Oil and Gas Transport to Europe

ITGI: Turkey-Greece-Italy Pipeline

LNG: Liquefied Natural Gas

OISR: Organization of International Strategic Research

PCA: Partnership and Cooperation Agreement

PKK: Kurdistan Workers' Party

RF: Russian Federation

SCP: South Caucasus Pipeline

TEN-E: Trans-European Energy Network

TCF: Trillion Cubic Feet

TFP: Turkish Foreign Policy

TRAPCO: Trans-Anatolia Pipeline Company

TPIC: Turkish Petroleum International Company

USSR: Union of Soviet Socialist Republics

USA: United States of America

INTRODUCTION

In our current international system, energy has become the most important element influencing world politics, world economy and the drawing of borders of some countries; and has been so since the industrial revolution. For this reason the consumption of energy is evaluated as an indicator of the economic development level of countries. In the recent past, the Gulf and Iraq wars showed that energy is not only an industrial need but also a means of national independence. Although the world's economic system has been in hands of multinational cooperation rather than the countries, the potential ability any nation to supply energy to others can directly influence that nation's ability to operate independently of other nations.

Eighty percent of world energy consumption comes from fossil fuel such as coal, oil and natural gas. Energy consumption has a continuous up-ward trend. According to research on energy consumption, fossil fuels will continue to play a dominant role in the energy sector. Nearly unlimited or abundant resources in certain regions have determined the roles and importance of certain countries. Producing countries have approached monopoly status and have tried to sell their products for more money, and they have used their energy industry as a weapon for their own political interest. On the other hand, consumer countries have used political and military power to keep

their energy needs less expensive and more consistent. Consequently, the security of various supplies of energy resources (subsequently refers to simply as "security of supply") is an element that causes wars and at the same time it is viewed negatively because of the adverse conditions.

We have seen that energy is equated with a national security subject in international politics. Because of this, governments must find continuous, dependable, clean and cheap energy, and therefore, they have to diversify their energy resources. The infrastructure of sustainable development, ensuring energy is on time, continuous, sufficient and low-cost has been discussed in accordance with security of supply. Increasing energy demand, decreasing proven resources of fossil fuels, increasing costs, and inconsistency of those costs have directed the countries to diversify these resources and increase their domestic production. The countries have to take measures to increase energy efficiency at every level.

The EU is the biggest energy importer and it is the third biggest energy consumer after the USA and China. The Union has imported more than 50 percent of its energy needs. Major portions of the imports come from Russia. After Russia cut the flow of natural gas via Ukraine and Belarus to Europe in the years 2006, 2007 and 2009, the concept of security of supply became more important for the EU. The EU has begun to take some measures such as diversification of energy routes and resources for the Union. Although

some data for crude oil shows different, Eurasia is the second biggest region after the Middle East for natural gas. When taking international conjuncture into consideration, it is clearly seen that the best regional alternatives for the EU are the energy resources of Central Asia, Caucasus region.

These countries are either entirely enclosed by land or their only coastlines lie on closed seas. The landlocked countries have a disadvantageous position with regards to accessing international trade. Paul Collier in his book The Bottom Billion argues that being landlocked in a poor geographic neighborhood is one of four major development "traps" that a country can be held back by. In general, he found that when a neighboring country experiences better growth, it tends to spill over into favorable development for the country itself. For landlocked countries, the effect is particularly strong, as they are limited from their trading activity with the rest of the world. *"If you are coastal, you serve the world; if you are landlocked, you serve your neighbors."*

On the other hand, although Turkey is an importer country, she is placed at the center of an alternative scenario because of her geographic position. Turkey is surrounded by energy producer countries in the east and energy consumer countries in the west. Production of natural gas in the Central Asia and Caucasus region has continued to increase. In consideration of ethnical and cultural links with Central Asia and Caucasus, and in starting

negotiations with Iran, Turkey has clearly shown that it wants to carry forward her “bridge” role to level of “key player”. Turkey doesn’t want to play a limited role as Energy Bridge at this point. In this study of alternatives for pipelines, the formation of LNG (Liquefied Natural Gas) facilities and its trend in the future are considered as an alternative for transmission of natural gas. This evaluation tries to answer such questions as “Is Turkey defined as a meeting and sharing point of a lot of links?" In this study, her possibility of being a HUB for trading energy and determining costs of the energy will be analyzed. It will prove that Turkey should implement several policies of security supply; it will benefit her greatly in the process of EU negotiation.

The study of Turkey’s Pipeline Strategy as an Alternative to the EU’s Energy Dependency consists of six chapters. In the first chapter, under the title of "EU Energy Dependency," primary energy resources production and consumption of EU-27 will be analyzed. EU energy dependency will be illustrated with graphics, tables and figures including showing future trends. Furthermore, data regarding the EU's security supply problems will be examined.

In the second chapter, titled "EU Energy Policy," subjects ranging from the historical development of the EU energy policy to Green Paper will be studied. In the last part of the chapter the importance of energy for EU Foreign Policy will be mentioned.

The third chapter, titled "Central Asia and Caucasus region," Iran and Iraq will be evaluated as alternative resources for the Security Supply Policy of the EU. At the same time, China will be analyzed as an emerging player in the energy wars.

In the next chapter, although Turkey is merely an importer country, her geo-strategical importance will be emphasized as pipeline projects are examined. This chapter falls is titled "The Energy Profile of Turkey."

The fifth chapter, entitled "The Role of Turkey for Energy Dependency of the EU", will examine the place of energy within Turkish foreign policy, the effect of energy policy on relations between Turkey and the EU, and the potential Turkey has of reaching "Determinative Power (key player)" status.

The conclusion will attempt to answer the following question:

- Can Turkey play a role in creating an alternative for an energy dependent EU and if so, how?

Importance and Method of the Subject

If the EU can not solve the issue of security supply, their claim to being an important international power will be difficult to maintain. On this subject, following policy with Russia will result in new power balances and will shape the future of the world. Turkey may be an important player within that new balance.

As a comprehensive and multi-faced energy policy and various types of energy resources are being examined, a detailed study is needed. Because of increasing importance in recent years, natural gas will be studied in detail. The other reason for specializing in natural gas is that it will be used more in the future because of its minimum impact on the environment.

The subject of this thesis will be analyzed on basis of three theories: Geopolitical, Interdependence Theory and Neo-Functionalism. First one is Geopolitical Theory. In the past, the concept of "Great Power" was based on some pre-conditions such as controlling strategical water resources. According to geopolitics, geographical conditions alone determine foreign policy of the states. Climatic features and natural resources of countries play a part in the events of the country's political structure and foreign-policy. With the globalization process, geopolitics has gained importance. Pipeline politics have revived the subject again. It is known as the return of geopolitics.

On basis of this theory, the claim of 'great power' can be made based on solving the problem of security supply for the EU by the third biggest energy exporter. On the other hand, in the process of integration to the European Union, Turkey is surrounded by countries which have an important supply of energy resources on the east and energy importer countries on the west. At this point, geopolitical models are frequently used in research that specifically analyzes the behaviors of states joined in alliance and neighboring relations. This geographical feature, namely of being a natural bridge, emphasizes Turkey's immense geopolitical importance: an importance which has been dictated to all Turkish children at every level of education starting in primary school. In this study, the geopolitical importance will be a starting point in explaining how Turkey can be a significant power in foreign policy.

Another theory will be used in this study is Interdependence Theory. Turkey is (much like the European countries) an energy importer. In fact, she imports approximately seventy percent of her own energy demands. At this point, there is an interdependence based on mutual interests. Co-operation models such as pipeline projects including the EU and Turkey will be explained on basis of this theory.

The third theory that will be used on the subject is Neo-Functionalism. Turkey has already entered the process of EU integration. According to neo-

functionalists, the integration in a sector encourages other integrations in other sectors. The dynamic which makes Turkey stronger in the EU integration process will be evaluated under this theory.

Data and Data Collection

The following material is and will be used: academic books and articles which concerning this subject, publications of various institutions, web sites and archives. Focus will be given to the publications of well accepted institutions and from various publications in related literature for more efficient study. In this context it will be considered energy publications of EU and publications of International Energy Agency (IEA) which has already the membership of EU. Additionally, data from the Energy Information Agency (EIA) dealing with USA Energy Ministry and publications of British Petroleum (BP) will be used in the study. After the literature review, data will be evaluated critically and analytically and applied to the subject in question.

Literature Review

When reviewing literature under the title of 'Energy in the field of social sciences,' it can be clearly seen that the issue came under increased examination in the early 2000's.[1] This date was starting point of Turkish

1 For further information: The Council of Higher Education, Nationa Thesis Center, http://tez2.yok.gov.tr/

energy policy in-country. However, the studies are mainly focused on renewable energy policies in the context of relations between Turkey and the EU.[2] The assessment of the workings are generally between two actors such as Russia-EU, Turkey and the EU, Central Asia-EU, Russia and Turkey, and are in the context of studies of fossil fuels and the pipelines strategies.[3]

In dissertations at the master and doctoral level which emphasize the geo-strategic importance of Turkey with regard to relations with the EU, popular opinion tends to be in a positive direction as in this thesis.[4] There are also

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Mustafa Süleyman Beşli, "The New geopolitics of energy", Marmara University, Institute of Social Sciences, Istanbul, 1999

Kamer Gebeceli," Energy relations between the European Union and Russia", Marmara University, Institute of Social Sciences, Istanbul, 2010

Hakan Korhan, "Enerji güvenliği ve Türkiye", Istanbul University, Institute of Social Sciences,, Istanbul, 2011

2 For further information: Ibid.

Mehmet Ali Güneş, "Türkiye'nin enerji sorunu için alternatif çözüm önerileri ve rüzgâr enerjisinin önemi", Adnan Menderes University, Institute of Social Sciences, Manisa, 2009

Hasan Ali Göncü, "Integrating turkey's renewable energy with global carbon market", Boğaziçi University, Institute of Social Sciences, Istanbul, 2010

3 For further information: Ibid.

Yüksel Yatar, "Avrupa Birliği enerji politikası ve bu politika bağlamında hazar havzası enerji kaynaklarının önemi", Süleyman Demirel University, Institute of Social Sciences, Isparta, 2007

Ekaterina Moiseyenko, "Türk-Rus ortak enerji politikaları ve ekonomik etkileri", Istanbul University, Institute of Social Sciences, Istanbul, 2009

Bayram Salamov, "Türkiye-Rusya enerji ilişkileri (1995–2005)", Gazi University, Institute of Social Sciences, Ankara, 2010

4 For further information:Ibid.

Emir Bakır, "Energy corridor identity of Turkey and supply security dimension of the EU energy policy", Izmir Economic University, Institute of Social Sciences, Izmir, 2006

some negative aspects. [5] These theses, especially selected studies of academicians such as Mert Bilgin who has been studying the subject of energy in Turkey in recent years, and from other academic specialists on international relations [6] are use to constitute the framework of this thesis.[7]

When International publications and reports are examined, the figures are different in terms of resources. Statements published by the EU, data and

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Aylin Serin, "Avrupa Birliği'nin enerji politikası sorunsalı, artan enerji bağımlılığı ve Türkiye'nin rolü", Gazi University, Institute of Social Sciences, Ankara, 2009

İhsan Korkmazgöz, "Türkiye'den geçen ve geçmesi planlanan enerji yolları ve bu enerji yollarının Türk dış politikasına etkileri", Atılım University, Institute of Social Sciences, İstanbul, 2010

5For further information: Ibid.
Onur Akyıldız, "21. yüzyılın değişen dinamikleri ve Avrupa Birliği'nin enerji politikaları kapsamında Türkiye'nin bağımsız enerji politikası", Gebze Institute of Technology University, Institute of Social Sciences, Kocaeli, 2010

Sanal Derslik, İsmail Güneş, "Ceyhan Rotterdam Olabilir mi?" http://www.sanalderslik.com/modules.php?name=kose_yazilari&file=yazi_oku&sid=33, accessed date: 30.07.2011

6 For further İnformation: USAK, Sedat Laçiner, "Türkiye'nin Enerji Güvenliği", 28.10.2008 http://www.usak.org.tr/makale.asp?id=395, accessed date: 22.07.2011

7 For futher information: Mert Bilgin, "Hazar'da Son Darbe" IQ Kültür Sanat Yayıncılık, İstanbul, Mayıs 2005

Mert Bilgin, "New Prospects in Political Economy of Inner –Caspian Hydrocarbons & Western Energy Corridor through Turkey" Energy Policy, Volume 35, 2007

Mert Bilgin, "Orta Asya ve Kafkasya'da Enerji Stratejileri: Rekabet İşbirliği ve Bölgesel Sorunlar",(Ed. Tayyar Arı) " Orta Asya ve Kafkasya, Rekabetten İşbirliğine", MMK Pres, Bursa, 2010.

Mert Bilgin, "The Emerging Caspian Energy Regime and Turkey's New Role" the Turkish Year Book of İnternational Relations, Volume 34, 2003.

Mert Bilgin, "Türkiye'nin Küresel Konumu", IQ Kültür Sanat Publications, Istanbul, Feb, 2008

publications of Eurostat, IEA and EIA, and reports from BP are used for technical consistency in the subject. A lot of notes related to the geostrategic importance of Turkey can be found from the selected sources under the title of EU Energy Dependency.[8]

Secondly, data is taken from an analysis of BOTAS and Gazprom. Mostly secondary sources as newspapers and magazines published in Turkey, tends to be negative regarding creating alternatives by Turkey for EU energy policy.[9] This approach can be based on political opposition of Turkey's progress towards Europe or ignored technical information. The pessimistic interpretations may also rely on the reality that energy policy can be successful only when it is integrated to foreign policy in a country. This can

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8 For further information: EU, European Commision, "EU Energy Policy And Turkey" http://ec.europa.eu/enlargement/pdf/european_energy_policy/fact_sheet_ecd_brux_comments_25_may_en.pdf, accssed date: 22.07.2011

EU, European Commission, "Turkey's Energy Strategy" http://ec.europa.eu/enlargement/pdf/european_energy_policy/turkeys_energy_strategy_en.pdf, acceseed date: 27.05.2011

EU, European Commission, "Turkey as an energy hub for Europe: prospects and challenges" - Speech by EU Commissioner Rehn, http://www.europa-eu-un.org/articles/en/article_8535_en.htm, accessed date: 15.05.2011

9 For further information: Enerji Dergisi, Necdet Pamir, "HUB olamadık" diyen DEK-TMK Yönetim Kurulu Üyesi Necdet Pamir: Boru hatları Türkiye'yi TRANSİT GEÇTİ!", http://www.enerjidergisi.com/n-566-boru-hatlari-turkiyeyi-transit-gecti.aspx, accessed date:12.07.2011.

be based on ignoring the multi-dimensional policy regarding, and problem-free relationships with neighbors of Turkey in recent years.

After the literature review, on the basis of the thesis, it is claimed that in the projects, lack of investment and uncertainty of the resources are closely related with the applied foreign policy. However, long-term planning and well-placed political steps will increase economic and political cooperation in the region including Turkey. Creating a peaceful region supports the role of Turkey as a new and different dimension for the EU.

CHAPTER 1

EU ENERGY DEPENDENCY

1.1 EU Energy Profile

This chapter will attempt to explain the EU's Energy Profile according to datas, graphics, and graphic descriptions of Eurostats. The gap between primary energy resources production and consumption of the EU will be presented on the basis of EU- 27 countries between 1998 and 2008. According to the datas, the importance of energy dependency for EU will be examined under the title of 'EU Energy Dependency.'

1.1.1 Primary Energy Resources Production

In the EU-27 production of primary energy there were 842.7 million tonnes of oil equivalent in 2008. This continued the generally downward trend of EU-27 production as supplies of raw materials become exhausted and/or producers considered the exploitation of limited resources uneconomical. The largest share of production was made by the United Kingdom (19, 5 % share of the EU-27 total). Indeed, the United Kingdom experienced by far the largest reduction in its output of primary energy, with production falling by 104.8 million tonnes of oil equivalent (toe) between the years of 1998-2008. The next largest decline was recorded in Poland (16.3 million toe). Germany, in contrast, maintained its level of production broadly in line with the 1998

level, while there was an expansion in the production of primary energy in France (up 11.0 million toe during the period under consideration). Along with the United Kingdom, Germany and France were the only other Member States to report that their production of primary energy was in excess of 100 million toe in 2008 (see Table 1).

Table 1: Energy Production of EU

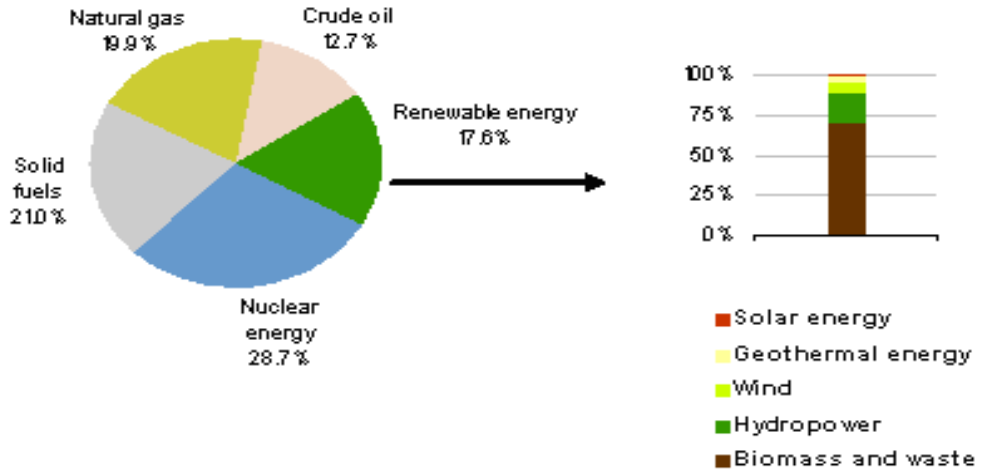
	Total production of primary energy		Share of total production, 2008 (%)				
	1998	2008	Nuclear energy	Solid fuels	Natural gas	Crude oil	Renewable energy
EU-27	940.0	842.7	28.7	21.0	19.9	12.7	17.6
Euro area (EA-16)	439.3	456.8	41.9	14.5	17.8	2.8	22.9
Belgium	12.1	13.6	86.7	0.0	0.0	-	13.3
Bulgaria	10.2	10.1	40.4	47.9	1.6	0.2	9.9
Czech Republic	30.5	32.5	21.1	70.1	0.5	0.8	7.6
Denmark	20.3	26.5	-	-	34.0	54.1	11.9
Germany	131.7	132.5	28.9	37.8	8.5	2.3	22.4
Estonia	3.2	4.2	-	82.1	-	-	17.9
Ireland	2.4	1.5	-	42.4	23.3	-	34.3
Greece	10.0	10.0	-	83.3	0.1	0.6	15.9
Spain	32.0	30.3	50.3	13.9	0.0	0.4	35.4
France	124.0	135.0	84.0	0.0	0.6	0.8	14.7
Italy	30.1	26.4	0.0	0.3	28.7	20.0	51.0
Cyprus	0.0	0.1	-	-	-	-	100.0
Latvia	1.8	1.8	-	0.2	-	-	99.9
Lithuania	4.4	3.6	71.2	0.5	-	3.6	24.6
Luxembourg	0.1	0.1	-	-	-	-	100.0
Hungary	11.9	10.4	36.7	16.3	19.3	11.8	15.9
Malta	-	-	-	-	-	-	-
Netherlands	63.6	66.3	1.6	-	90.3	3.3	4.7
Austria	8.7	10.6	-	0.0	12.4	9.4	78.2
Poland	86.8	70.4	-	85.9	5.2	1.1	7.7
Portugal	3.7	4.4	-	0.0	-	-	100.0
Romania	29.2	29.1	10.0	24.0	30.9	16.5	18.6
Slovenia	3.0	3.6	44.4	32.5	0.1	0.0	22.9
Slovakia	4.7	6.1	70.7	10.2	1.4	0.3	17.3
Finland	13.1	16.3	36.4	7.1	-	-	56.4
Sweden	33.0	32.8	50.3	0.8	-	0.0	49.0
United Kingdom	269.3	164.5	8.2	6.4	38.1	44.4	2.9
Iceland	1.8	:	:	:	:	:	:
Norway	206.6	219.3	:	1.0	39.7	53.2	6.1
Switzerland	10.6	12.3	57.9	:	0.0	:	42.1
Croatia	4.0	3.9	:	0.0	55.8	22.2	22.0
Turkey	29.1	29.1	:	57.4	2.9	7.5	32.2

Source: Eurostat (million tonnes of oil equivalent)

In the EU-27 primary energy production in 2008 was diversified, the most important of which was nuclear energy having a share of 28.7 % in total. The importance of nuclear fuel was especially high in Belgium, Spain, France,

Lithuania, Slovakia and Sweden. In these countries, nuclear fuel accounted for more than half of the national production of primary energy. About half of the EU-27's total productions of primary energy were solid fuels and natural gas. Their shares were 21.0 % for solid fuel, 19.9 % for natural gas, 17.6 % for renewable energy sources and 12.7 % for crude oil (see Figure 1).

Figure 1: Production of Primary Energy, EU–27, 2008

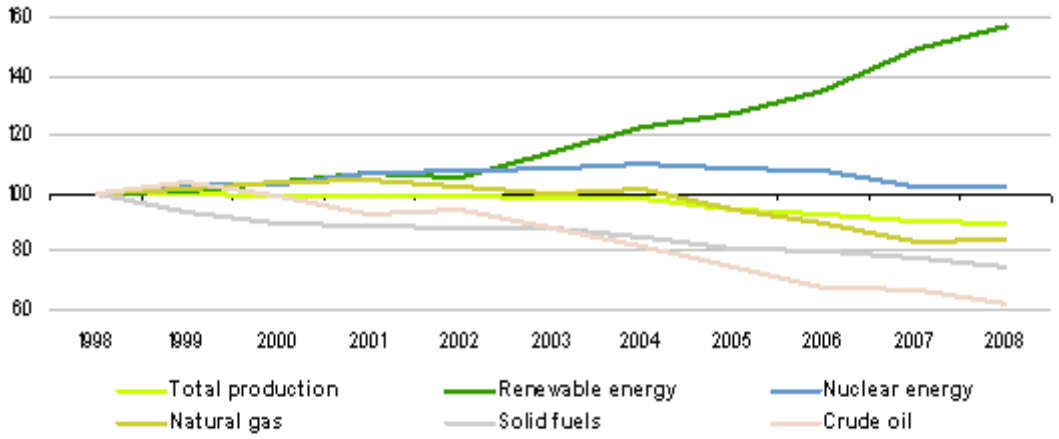


Source: Eurostat (% of total, based on tonnes of oil equivalent).

The growth of primary production from renewable energy sources has surpassed all the other energy types since 2002 (see Figure 2). Actually it appears to be at a pivitol point at this date. The production of renewables accelerated, rising by 48.8 % between 2002 and 2008. Except for a low

increase of 2.2 % for nuclear energy the production levels for the other sources of energy generally fell between 1998 and 2008. In the production of primary energy, the largest reductions were -37.4 % for crude oil, -25.3 % for solid fuels and -15.9 % for natural gas. [10]

Figure 2: Development of the Production of Primary Energy EU–27



Source: Eurostat (by fuel, 1998=100, based on tonnes of oil equivalent)

1.1.2 Primary Energy Resources Consumption

The descent in the primary production of hard coal, lignite, crude oil and natural gas has caused a situation where the EU increasingly depends on primary energy imports to supply the demand. In EU-27, imports of primary

10 European Commission, Eurostat, "Energy Production and Imports, datas from 2010", http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Energy_production_and_imports accessed date:10.04.2011

energy surpassed exports by some 1015.0 million toe in 2008. The largest net importers of primary energy are usually the most populous Member States. The only net exporter of primary energy among the EU Member States has been Denmark since 2004 (see Table 2).

Table 2: Net Imports of Primary Energy Resources, EU-27

	(1 000 tonnes of oil equivalent)					(tonnes of oil equivalent per inhabitant)				
	2000	2002	2004	2006	2008	2000	2002	2004	2006	2008
EU-27	826 732	858 657	941 376	1 010 880	1 014 961	1.71	1.77	1.93	2.05	2.04
Euro area (EA-16)	795 294	813 614	848 185	868 166	850 889	2.54	2.58	2.65	2.69	2.60
Belgium	90 812	49 341	53 940	53 486	53 896	4.96	4.79	5.19	5.09	5.05
Bulgaria	8 718	8 936	9 241	9 540	10 543	1.06	1.13	1.18	1.24	1.38
Czech Republic	9 475	11 358	11 742	12 921	12 462	0.92	1.11	1.15	1.26	1.20
Denmark	-7 255	-8 610	-9 946	-7 930	-4 638	-1.36	-1.60	-1.84	-1.46	-0.85
Germany	205 682	209 252	215 533	215 558	211 181	2.50	2.54	2.61	2.61	2.57
Estonia	1 696	1 448	1 653	1 614	1 449	1.21	1.06	1.22	1.20	1.08
Ireland	12 270	13 742	13 865	14 221	14 261	3.25	3.52	3.44	3.38	3.24
Greece	22 065	23 308	24 708	24 857	25 484	2.02	2.12	2.24	2.23	2.27
Spain	99 334	108 012	115 282	124 054	122 900	2.48	2.64	2.72	2.83	2.71
France	134 196	137 477	141 485	141 895	141 472	2.22	2.24	2.27	2.25	2.21
Italy	153 527	153 542	159 548	164 570	157 064	2.70	2.69	2.76	2.80	2.63
Cyprus	2 547	2 586	2 417	2 971	3 032	3.69	3.67	3.31	3.88	3.84
Latvia	2 246	2 455	3 173	3 170	2 781	0.94	1.05	1.37	1.38	1.22
Lithuania	4 343	3 739	4 439	5 481	5 907	1.24	1.08	1.29	1.61	1.64
Luxembourg	3 630	3 950	4 535	4 662	4 498	8.37	8.90	9.97	9.94	9.30
Hungary	14 032	14 777	16 095	17 408	17 049	1.37	1.45	1.59	1.73	1.70
Malta	1 466	1 565	1 902	1 648	1 857	3.86	3.97	4.76	4.07	4.53
Netherlands	35 239	32 279	31 062	36 962	34 215	2.22	2.00	1.91	2.26	2.09
Austria	19 112	21 181	23 383	24 973	23 628	2.39	2.63	2.87	3.03	2.84
Poland	10 161	10 100	13 345	19 485	30 095	0.26	0.26	0.35	0.51	0.79
Portugal	21 881	22 519	22 653	21 569	21 263	2.15	2.18	2.16	2.04	2.00
Romania	8 129	9 165	12 000	11 901	11 289	0.36	0.42	0.55	0.55	0.52
Slovenia (1)	3 366	3 440	3 709	3 827	4 289	1.69	1.73	1.86	1.91	2.13
Slovakia	11 581	12 576	13 204	12 046	12 066	2.15	2.34	2.45	2.24	2.23
Finland	18 587	18 844	20 958	20 866	20 181	3.59	3.63	4.02	3.97	3.81
Sweden	19 182	19 913	20 373	19 797	19 752	2.16	2.24	2.27	2.19	2.15
United Kingdom	-39 249	-28 239	11 076	49 327	57 783	-0.67	-0.48	0.19	0.82	0.94
Iceland	1 036	969	1 072	1 099	:	3.71	3.38	3.69	3.66	:
Norway	-198 280	-208 707	-202 897	-188 231	-188 612	-44.27	-46.13	-44.33	-40.57	-39.82
Switzerland	14 079	15 047	15 168	16 111	15 419	1.97	2.07	2.06	2.16	2.03
Croatia	4 181	4 977	5 105	4 878	5 907	0.93	1.12	1.15	1.10	1.24
Turkey	51 062	51 107	58 705	69 293	72 872	0.76	0.74	0.83	0.96	1.03

(1) Tonnes of oil equivalent per inhabitant, break in series, 2008.

Source: Eurostat

In the origin of EU-27 energy imports, Russia has emerged as the leading supplier (see Table 3). 29.0 % of the EU-27's imports of crude oil were from Russia in 2008. Russia was also the leading supplier of hard coal, its share of

EU-27 imports rising from 7.9 % in 2000 to 23.7 % by 2008. In contrast, Russia's share of EU-27 imports of natural gas declined from 40.4 % to 31.5 % between 2000 and 2008. During this period the volume of natural gas imports from Russia remained relatively unchanged, while there was an increase in the share of natural gas imports from Norway. [11]

[11] Ibid

Table 3: Main Origin of Primary Energy Imports, EU–27

	Hard coal								
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Russia	7.9	9.8	11.4	12.6	17.6	21.2	22.5	22.6	23.7
South Africa	21.2	23.2	26.8	27.1	23.4	22.7	21.5	18.5	15.3
United States	10.8	9.5	7.0	6.0	6.7	6.9	7.0	8.4	12.8
Colombia	12.3	10.7	10.6	10.9	10.7	10.6	10.6	11.7	11.1
Australia	15.1	13.9	14.6	14.7	13.4	11.9	11.0	12.0	10.8
Indonesia	4.8	4.8	5.7	6.1	6.1	6.5	8.5	7.1	6.7
Canada	3.4	3.3	2.7	1.8	1.9	2.9	2.5	2.9	2.4
Ukraine	1.1	1.4	1.7	1.1	1.9	1.8	1.3	1.5	1.9
Venezuela	1.8	1.4	1.7	2.4	1.0	0.9	0.8	1.0	0.9
Others	21.6	22.1	17.9	17.2	17.1	14.6	14.2	14.5	14.5
	Crude oil								
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Russia	18.7	22.7	26.1	28.1	30.0	29.9	30.4	30.4	29.0
Norway	19.3	17.9	17.4	17.5	17.3	15.5	14.3	13.8	14.0
Libya	7.6	7.3	6.6	7.6	7.9	8.0	8.5	9.1	9.3
Saudi Arabia	10.8	9.5	9.0	10.1	10.2	9.7	8.2	6.6	6.3
Iran	5.9	5.2	4.4	5.7	5.7	5.6	5.8	5.6	5.0
Kazakhstan	1.6	1.5	2.3	2.6	3.5	4.2	4.3	4.4	4.6
Nigeria	3.7	4.3	3.1	3.8	2.4	3.0	3.2	2.5	3.7
Iraq	5.2	3.4	2.7	1.4	2.0	2.0	2.7	3.1	3.1
Azerbaijan	0.6	0.8	0.9	0.9	0.8	1.1	1.9	2.6	2.7
Others	26.6	27.4	27.5	22.3	20.1	21.0	20.7	22.0	22.2
	Natural gas								
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Russia	40.4	38.5	36.7	37.2	35.9	34.5	33.0	31.7	31.5
Norway	17.4	18.6	21.3	21.0	20.3	20.7	21.4	23.2	24.1
Algeria	19.6	17.0	17.2	16.4	14.8	15.3	13.8	12.7	12.4
Nigeria	1.5	1.9	1.8	2.6	3.0	3.0	3.6	3.9	3.3
Libya	0.3	0.3	0.2	0.2	0.3	1.4	2.1	2.5	2.5
Egypt	0.1	0.2	0.7	0.6	1.2	1.3	1.5	1.8	1.8
Qatar	0.0	0.0	0.0	0.0	0.0	1.4	2.1	1.5	1.4
Trinidad and Tobago	0.3	0.2	0.2	0.0	0.0	0.2	1.1	0.7	1.4
Croatia	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.2
Others	20.4	23.3	22.1	21.9	24.4	22.2	21.2	21.8	21.4

Source: Eurostat (% of extra EU–27 imports).

If the energy import of EU is shared among relatively few exporter countries, the security supply of the EU may be threatened. More than two thirds (68.0 %) of EU-27 imports of natural gas came from Russia, Norway or Algeria in 2008. A similar analysis shows that 52.4 % of EU-27 crude oil

imports came from Russia, Norway and Libya, while 51.4 % of hard coal imports were from Russia, South Africa and the United States. Although their import volumes remain relatively small, there was some evidence of new partner countries emerging between 2000 and 2008. [12]

Table 4: Energy Dependency Rate, EU–27

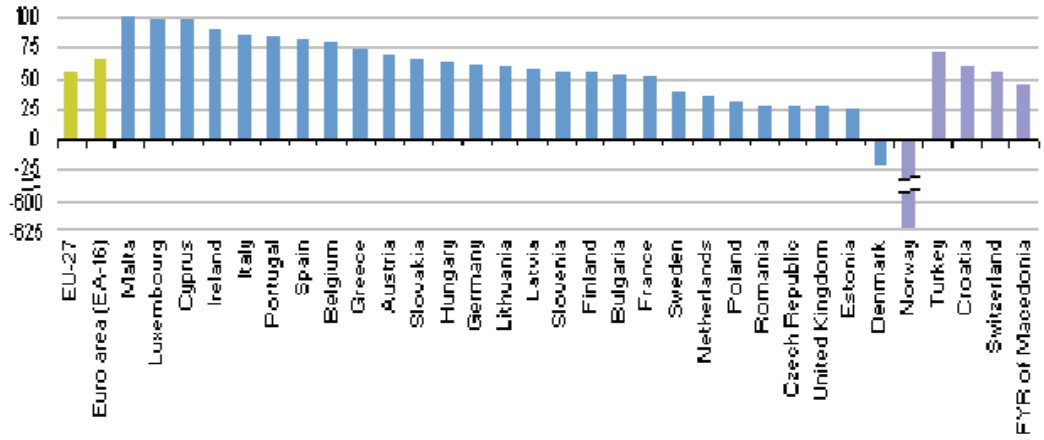
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
All products	46.1	45.2	46.8	47.5	47.6	49.0	50.3	52.6	53.8	53.1	54.8
Solid fuels	26.6	27.8	30.7	33.8	33.1	34.9	38.1	39.9	41.1	41.5	44.9
Crude oil	76.0	73.0	74.5	76.7	75.4	77.7	80.0	81.6	83.2	82.9	84.2
Natural gas	45.6	47.9	48.9	47.3	51.2	52.5	54.0	57.7	60.8	60.3	62.3

Source: Eurostat

EU dependency of energy imports increased from less than 40 % of gross energy consumption in the 1980's to 54.8 % by 2008 (see Table 4). The highest energy dependency rates were crude oil (84.2 %) and natural gas (62.3 %). The dependency on non-member countries for supplies of solid fuels and natural gas grew at a faster pace in the last decade than the dependency on crude oil. Since 2004, the EU-27's net imports of energy have been greater than its primary production; in other words, more than half of the EU-27's gross inland energy consumption was supplied by net imports.[13]

[12] Ibid.
[13] Ibid.

Figure 3: Energy Dependency Rate - All Products, 2008



Source: Eurostat (% of net imports in gross inland consumption and bunkers, based on tonnes of oil equivalent)

As it was a net exporter, Denmark was the only EU-27 Member State in 2008 with a negative dependency rate (see Figure 3). Among the other Member States, the lowest dependency rates were recorded by Estonia, the United Kingdom the Czech Republic and Romania; meanwhile, Malta, Luxembourg and Cyprus were almost entirely dependent on primary energy imports.[14]

1.2 Security Supply Problem of EU

Energy security is a term for an association between national security and the availability of natural resources for energy consumption. Access to cheap

14 Ibid.

energy has become essential to the functioning of modern economies. However, the uneven distribution of energy supplies among countries has led to significant vulnerabilities. Threats to energy security include the political instability of several energy producing countries, the manipulation of energy supplies, the competition over energy sources, attack on supply infrastructure, as well as accidents, natural disasters, the funding to foreign dictators, rising terrorism, and dominant countries reliance to the foreign oil supply.[15]

Producer countries who have become a monopoly have tried to sell their products for more money and they have used the supply of energy as an weapon for their own political interest. On the other hand consumer countries have used political and military power to maintin a constant and less-expensive supply for their energy needs. Consequently, security of supply is an element which causes wars and at the same time is viewed negatively because of the war. We see that energy is evaluated as a security subject in international politics. Because of this, governments have to find continuous, dependable, clean and cheap energy. Therefore they have to diversify these resources.

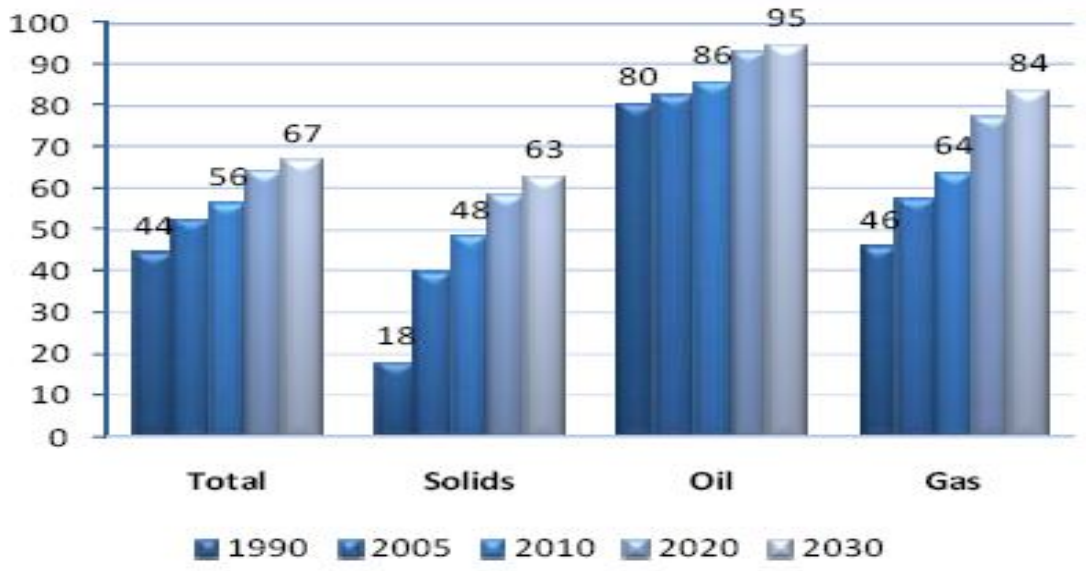
15 Power plays: "Energy and Australia's security" October 11, 2007, http://www.aspi.org.au/publications/publication_details.aspx?ContentID=142&pubtype=5 accessed date: 11.04.2011.

EU is the biggest energy importer and third biggest energy consumer after the USA and China. The European Union has imported more than half of its energy needs. Important part of the EU's primary energy needs are supplying from Russia and Norway (see table 2).

When we evaluated the suppliers of EU, it became clear that the dividing majority of import between a few countries threatens the security supply of the EU. Although there is no significant problem in supplying from Norway, The country's petroleum production has been gradually declining as oil fields have matured. The Norwegian government reportedly expects oil production to average 2,2 million bbl/d in 2010, and estimates that in 2015 production could slip to 1.97 million bbl/d.[16] On the other hand, Russia cut the flow of gas through the Ukraine and Belarus respectively in the years of 2006, 2007 and 2009. At that point it was claimed that Russia was using the energy as an political weapon for its own interest: so much so that the EU started to seriously question dependence on Russia.

The Commission Green Paper on security of energy supply (November 2000) drew a sobering picture of the EU's energy situation. If no action is taken, it predicted that the EU's energy dependency would climb from 50% in 2000 to more than 70% in 2030 (see figure 4).

Figure 4: Trends to 2030, Import Dependency of the EU



Source: EC, European Energy and Transport, (in %)

The current situation for the main imported fossil fuels is described as follows:

- 45% of EU oil imports originate from the Middle East; by 2030, 90% of EU oil consumption will have to be covered by imports.
- 40% of EU gas imports originate from Russia, 30% Algeria, 25% Norway; By 2030, over 60% of EU gas imports are expected to come from Russia with overall external dependency expected to reach 80%.[17]

16 US Energy Administration, "Country Analysis Briefs: Norway", August 2010, http://www.eia.gov/countries/cab.cfm?fips=NO accessed date: 14.02.2011

17 Euractive, "Geopolitics of EU Energy Supply", http://www.euractiv.com/en/energy/geopolitics-eu-energy-supply/article-142665, Published: 10 January 2007 | Updated: 18 July 2005, accessed date: 14.02.2011

When the trends to future are evaluated, the most important danger for the EU is increasing its dependency on Russia. However at that point, some different views arise about the subject in terms of energy relations between Russia an EU. One of them is that even during the Soviet Union, Russia didn't threaten to cut natural gas to Europe. In this regard, according to past periods, Russia has less reason to cut the natural gas. The EU depends on Russia as long as Russia depends on the EU with regards to the energy subjects. When the EU imports her needs from Russia and he exports his resources to EU, there is interdependence. In the medium term, there is no possibility of change for Russia.

Another view is that after the revolutions in Georgia and the Ukraine, Russia felt itself to be under a threat and started to use energy as an instrument of foreign policy. Increasing natural gas prices and cutting natural gas by Russia support this second view. In the new term, the EU is working to establish a common energy policy and reduce their dependency on Russia.

CHAPTER 2

EU ENERGY POLICY

In the second chapter, the importance of the subject of energy will be emphasized even during the establishment of the Union. In the beginning, countries came together for economic cooperation in accordance with the theory of neo-functionalism and the final goal of working for a political union. For this purpose, the most important cornerstone of this ideal is energy, as it was in the past. The process of creating a common energy policy will be described historically. In last part of the chapter, the place of the common energy policy for EU Foreign Policy is examined.

2.1. The Historical Development of EU Energy Policy

Energy policy of the EU is based on the Treaty of Paris which was the founder of the European Coal and Steam Community and the Treaty of EURATOM. Although there were some regulations in the Treaty of Rome establishing the European Economic Community (EEC), there was no provision for other areas. After the OPEC crisis on 1973, the Union decided to look for new energy sources to decrease their need for oil and thus started to build nuclear power stations.

The council's decision from September of 1986 and the report that was prepared by the council (related to forming an internal market of energy aimed at making member countries self-sufficient in the sector of energy and more liberal policies) have begun to be followed. At the same time, in 1991 the European Energy Charter was signed by 46 states. The main targets of the Charter were the increase of security of supply, production, and distribution; effective use of energy; and minimizing environmental impact. In 1998, the Energy Charter and Energy Efficiency Protocol came into effect to reach these objectives.

To overcome the problems on the energy front, it was decided to introduce the energy sector to the common market, and studies have increased. "White Paper" entitled "An Energy Policy for EU" which states the aims and general rules for EU internal market of energy which have been accepted in 1995.[18] On the other hand; the EU brought out the sustainable improvement target of the Treaty of Amsterdam which was signed in 1997.[19]

18 EU, European Commision, "An Energy Policy for EU", http://europa.eu/documentation/official-docs/white-papers/pdf/energy_white_paper_com_95_682.pdf, accessed date: 25.02.2011.

19 EU, European Commission, European Documentation, "The ABC of Community law" http://ec.europa.eu/publications/booklets/eu_documentation/02/txt_en.pdf, accessed date: 25.02.2011

2.1.1 Basic Elements of EU Energy Policy

The EU defines three main policies such as security of supply, competitive energy system, and the protection of the environment to perform sustainable improvements. Then the EU Commission implemented The Shared Analysis Project in 1999. Some important points were highlighted in the subtitles of this project such as the future of world energy demand, liberalization of energy and natural gas markets in accordance with KYOTO protocol, determining new standards for saving the environment and increasing the efficiency of energy production and consumption.

The energy policy of the EU is supported by various projects. "Intelligent Energy Europe Programme" has started to be applied according to the targets that are highlighted in the Green Paper called "Energy: Security of Supply" strengthening the security of the world, fighting with changes in climate and bringing european industry into compliance.

2.1.2 Emergence of Common Energy Policy in EU (Green Paper)

This is a discussion document released by the European Commission to stimulate debate and launch a process of consultation at the European level. The Green paper presents a range of ideas and invites interested individuals or organizations to contribute views and information.

Green Papers on entrepreneurship in Europe (2003), on demographic change and a new solidarity between the generations (2005) or, more recently, on a European strategy for sustainable, competitive and secure energy (2006) are examples of topics discussed.[20]

EU member countries published the Commission's Energy Green Paper; entitled "The Competitive and Sustainable Energy Policy Program" in summit, March 2006 in order to establish a new energy policy in EU. The aim of the Green Paper is a declaration of suggestions to prepare a discussion area between member countries in order to have a common policy. Six priority subjects on the Green Paper are determined by the Commission such as:

- Energy for employment and growth in Europe
- Guarantying security of energy resources
- Strengthening solidarity between the member states
- Overcoming climate change
- Promoting RE-DE on energy
- Relationships with third countries

20 EU, "Europa Glossary" http://europa.eu/scadplus/glossary/green_paper_en.htm, accessed date:18.02.2011

Summaries of the proposals on Green Paper are the following as:

- Providing full development in the gas and electricity markets in the Union
- Reviewing management policies on oil and gas stocks
- Developing security of network
- Establishing a new solidarity mechanism to aid member states which have problems related to trans-European future energy infrastructure
- Starting discussions and finding solutions to different energy resource and climate change problems in EU
- Establishing an 'Action Plan' on energy efficiency according common energy policy goals
- Establishing a 'Road Map' for renewable energy resources
- Strategic energy technology plan
- Preparing a priority list to establish a common energy network
- Giving priority EU- Russia Energy Dialogue and completing the agreement of Energy Charter
- Establishing Pan-Europe Energy Union relying on the model of South-East Europe Energy Union
- If energy resource problems arise outside the EU, improving a new union mechanism to answer with appropriate speed and coordination
- Reducing energy consumption down to 20 % until 2020, and in this way, pursing energy saving about 60 billion euro
- Creating 1 million new jobs with energy saving programs

- Reducing CO2 emission down to 50 % by reducing energy consumption down to 20 % until 2020 in accordance with Kyoto Protocol
- Reduce pollution[21]

2.2 Energy as an Instrument of Foreign Policy

The geopolitics of oil and gas has made a spectacular return to the international political agenda. The European Union has recognized the importance of incorporating energy security more systematically into foreign policy. It has committed itself to pursuing an energy security policy based on market interdependence, European unity and long-term governance improvements in producer states. [22] In addition to regulations in the field of energy, the EU has aimed to organize relations with exporter countries to ensure its own security supply policy.

- Partnership and Cooperation Agreement (PCA): [23] After the PCA came into force between EU and Russia, the Union started a dialogue

21 EU, European Commission, Energy, "Green Paper", http://ec.europa.eu/energy/green-paper-energy/index_en.htm accessed date:18.02.2011

22 Richard Youngs, "Energy Security: Europe's New Foreign Policy Challenge", 10 March, http://www.fride.org/publication/567/energy-security:-europe's-new-foreign-policy-challenge, accessed date: 24.02.2011

23 For further information, see also : EU, Summaries of EU Legislations, "Partnership and Cooperation Agreements (PCAs): Russia, Eastern Europe, the Southern Caucasus and Central Asia", http://europa.eu/legislation_summaries/external_relations/relations_with_third_countries/eastern_europe_and_central_asia/r17002_en.htm, accessed date: 29.09.2011

process with Russia in terms of energy. The dialogue means developing process of partnership between the states. It was created to prevent consideration of EU in terms of petroleum, natural gas, electric, energy saving, environmental protection areas and the EU's energy supply security.

- Trans- European Networks (TEN): [24] In 1996–2001 EU implemented the plan TEN's to connect energy markets. It is aimed to link energy networks (electricity and natural gas) for common energy market in EU. Another objective of TEN's is developing relations with countries exporting energy.

- Interstate Oil and Gas Transport to Europe (INOGATE):[25] The INOGATE Programme is an international energy co-operation programme between the European Union and the Partner Countries of Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine, Uzbekistan and Turkey.

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24 For further information, see also : EU, Summaries of EU Legislations, "Trans-European energy Networks", http://europa.eu/legislation_summaries/regional_policy/management/transeuropean_networks/l27066_en.htm, accessed date: 05.04.2011

25 For further Information: see also: "INOGATE Programme Annual Report: A review of the INOGATE Programme's activities in 2009", http://www.inogate.org/attachments/article/46/Inogate_AR_2009_en_PRINT.pdf, accessed date: 06.07.2011

They have agreed to work together toward achieving the following four major objectives:

1. Converging energy markets on the basis of the principles of the EU internal energy market taking into account the particularities of the involved countries.
2. Enhancing energy security by addressing the issues of energy exports/imports, supply diversification, energy transit and energy demand
3. Supporting sustainable energy development, including the development of energy efficiency, renewable energy and demand side management.
4. Attracting investment towards energy projects of common and regional interest.[26]

26INNOGATE, "About INNOGATE", http://www.inogate.org/index.php?option=com_content&view=article&id=46&Itemid=72&lang=en, accessed date: 21.02.2011.

CHAPTER 3

ALTERNATIVES

FOR THE ENERGY DEPENDENCY OF EU

In this Chapter, alternative energy producer countries neighboring Turkey (such as Central Asian and Caucasus countries, Iran and Iraq), will be examined regarding their link to the energy dependency of the EU. It is questioned whether or not economic relations with the countries can provide for political cooperation in this region on the basis of the neo-functionalist theory. Finally, China is assessed in point of its increasing energy needs which may upset the energy balances of the region.

3.1 Central Asia and Caucasus

In the widest sense, it is possible to group central Asian and Caucasus countries according to whether they are oil and natural gas producers or not. In this case Uzbekistan, Azerbaijan, Kazakhstan and Turkmenistan are in category of Central Asian- Caucasian producer. On the other hand most of the productions of Russia and Iran have been attained from outside of this geography so that it is suitable to keep them out. [27]

27 Mert Bilgin, "The Emerging Caspian Energy Regime and Turkey's New Role" the Turkish Year Book of İnternational Relations, Volume 34, 2003, p 1-22

Although some datas for crude oil shows difference, Eurasia is the second biggest region after the Middle East for natural gas (see table 5 and 6). When taking international conjuncture into consideration, energy resources of the region can be considered as the regional alternatives for EU.

Table 5: Proved Reserves of Natural Gas on Central Asia and Caucasus

Country	Natural Gas (Trillion Cubic Feet)
Azerbaijan	30
Kazakhstan	85
Russia	1680
Turkmenistan	265
Uzbekistan	65

Sources: EIA, the Country Profiles, 2010

Table 6: Crude Oil Proved Reserves of Central Asian and Caucasus Countries

Country	Oil (Billion Barrels)
Azerbaijan	7
Kazakhstan	30
Russia	60
Turkmenistan	0.6
Uzbekistan	0.594

Source: EIA, the Country Profiles, 2010

Central Asia and Caucasus have importance because of their proven natural gas and oil reserves. Cooperation opportunities offered by the region has the capacity to effect strategic recovery of Iran and Russia, security supply policy of the EU, ability of the USA to achieve her own global goals, global positions of China and India, and the claim of Turkey to become an energy bridge simultaneously.[28]

Central Asia and the Caucasus have presented themselves as geopolitically consistent in terms of resources, production, transport and consumption processes. Azerbaijan, Kazakhstan, Turkmenistan, Uzbekistan and Iran, all having oil and natural gas reserves, are located in the region. The region is a new center for geopolitical struggle.

In the region, the countries attract attention of foreign investors to achieve new channels for world markets. On the other hand, Turkey has to develop new approaches for Caucasus and Central Asia. Turkey's interest in Central Asia and Caucasus region has caused aggressive foreign policy further affected by geographical, cultural and historical factors. In addition, it is not possible to discuss the proactive foreign policy of Turkey in the regions

28 Mert Bilgin, "New Prospects in Political Economy of Inner –Caspian Hydrocarbons & Western Energy Corridor through Turkey" Energy Policy, Volume 35, Dec 2007, p 6363-6394

of Central Asia and Caucasus without mentioning the subject of energy at the beginning.

However after the collapse of USSR, Russian domination has remained in the region. Russia has resold the natural gas imported from Uzbekistan, Kazakhstan and Turkmenistan to Europe. When Kazakhstan makes agreements with multi-national companies, she continues to protect Russia's interest in the stage of oil transmission. Turkmenistan is dependent on Russia except for less oil and gas trading with Iran. However, Azerbaijan has become independent with Baku-Tbilisi-Erzurum and Baku-Tbilisi- Ceyhan pipelines in terms of energy. When the status of countries in the region is evaluated, the region is insufficient to create alternative projects against Russia for EU energy dependency. In short and middle term, the countries can create a diversity of resources, but not an alternative to Russia.

3.2 Iraq

It is possible to view Iraq as an alternative source for energy dependency of the EU in terms of having energy resources and its geographical location close to Turkey.

Iraq was the world's 12th largest oil producer in 2009, and has the world's fourth largest proven petroleum reserves after Saudi Arabia, Canada, and Iran. Just a fraction of Iraq's known fields are in development, and Iraq may

be one of the few places left where vast reserves, proven and unknown, have barely been exploited. Iraq's energy sector is heavily based upon oil, with approximately 94 percent of its energy needs met with petroleum. Iraq has begun to develop its oil and natural gas reserves after years of sanctions and wars, but will need to develop its infrastructure in order to reach its production potential. Total effective export capacity is 2,5 million bbl/d, far lower than installed capacity because of disruptions. Because of lack of maintenance, some facilities have been closed for years and are unlikely to be re-opened.[29]

Iraq has one major crude oil export pipeline, the Kirkurk-Ceyhan (Iraq-Turkey) pipeline, which transports oil from the north of Iraq to the Turkish Mediterranean port of Ceyhan. This pipeline has been subject to repeated disruptions this decade, limiting exports from the northern fields. Iraq signed an agreement with Turkey to extend the operation of the 1,6 million bbl/d pipeline, as well as to upgrade its capacity by 1 million bbl/d. In order for this pipeline to reach its design capacity, Iraq would need to receive oil from the south via the Strategic Pipeline, which was designed to allow flows of crude oil from the south of Iraq to go north via Turkey, and vice-versa. Iraq has

[29] EIA, "Country Analysis Brief: Iraq", http://www.eia.doe.gov/emeu/cabs/Iraq/pdf.pdf , last update 2010, accessed date: 14.04 2011

proposed building a new strategic line from Basra to the northern city of Kirkuk, with the line consisting of two additional crude oil pipelines.[30]

According to the Oil and Gas Journal, Iraq's proven natural gas reserves are 112 trillion cubic feet (Tcf), the tenth largest in the world. An estimated 70 percent of these lie in Basra governorate (province) in the south of Iraq. Iraq's natural gas sector is believed to contain significant untapped resources which the Iraq government would like to develop for domestic production and export.[31]

Iraq has eyed northern export routes such as the proposed Nabucco pipeline through Turkey to Europe, and in July 2009 Prime Minister Nouri Al-Malikie suggested that Iraq could be exporting 530 Bcf per year to Europe by 2015. A second option is the Arab Gas Pipeline (AGP) project. The proposed AGP pipeline would deliver gas from Iraq's Akkas field to Syria and then on to Lebanon and the Turkish border sometime in 2010, and then on to Europe. Other proposals have included building LNG exporting facilities in the Basra region.[32] To realize these projects, Oil Act must be approved in parliament of Iraq. Having a important place in the agenda of Iraq may result in a review of the energy policy of Turkey. The Oil act which was

30 Ibid

31 Ibid

32 Ibid

prepared politically by the USA in accordance with the benefit of American and British oil companies is not still approved in Iraqi parliament.

Oil is evaluated as a common product of Iraq by Iraq's Sunni and Shia. On the other hand Kurds want to have a say regarding the field of petroleum. Therefore Muqtada Al-Sadr's supporters are against privatization of Iraqi oil. Their presence complicates the matter of approving this law. Currently, it does not seem possible to predict the future of Iraqi natural resources in the short term.

3.3 Iran As An Alternative

Iran is one of the three major countries holding proven oil and natural gas reserves of the world (see table 7). By January 1, 2010 Iran holds 137,6 billion barrels of the world's proven oil reserves.[33]

33 EIA, "Country Analysis Briefs: Iran," October 2007, http://www.eia.doe.gov/entett/cabs/ıran/pdf.pdf accessed date: 14.03 2010

Table 7: The Countries Having the Most Proven Oil Reserves of the World

Country	Billion Barrels
Saudi Arabia	259.9
Canada	175.2
Iran	137.6
Iraq	115
Kuwait	104.5
Venezuela	99.4
United Arab Emirates	97.8
Russia	60
Libya	44.3
Nigeria	37.2
Kazakhstan	30

Source: EIA, The Country Profiles, 2010

The country is currently one of the world's largest crude oil exporters. One of the biggest problems is the declining of oil reserves so that new oil reverses should be developed in especially in Caspian Region. According to datas of EIA, Iran has already exported crude oil to European countries as Italy, Spain and France. The country has the second largest natural gas reserves of the world after Russia. It is estimated that Iran has 1045 trillion

cubic meters of proven natural gas reserves.[34] More than half of Iranian natural gas has been dispersed so that it could not be developed. Foreign investments are needed for substantial investment in this area. Applied sanctions by the USA have prevented intense research and development activities of Iran in the Caspian Sea.

The position of Iran in the realm of global and regional energy dynamics is very important. Despite the objections of the USA, the EU has tried to preserve the political and strategical dialogue with Iran. Permanent members of United Nations; China and Russia have supported to Iran despite the USA's trying to issue a decision to boycott Iran in the Security Council. China and India have competed for gas and oil from Iran. Long-termed agreements between Russia, Kazakhstan and Turkmenistan have caused the projects which are supported by the USA to be postponed.

Turkey realizes the importance of Iran. In the same way, Iran needs energy partners. A protocol which was signed between Iran and Turkey has given the right to Turkey to prospect for natural gas in South Pars Natural Gas Basin. Similarly, European countries are seeking ways to cooperate with Iran in this field, as it is clearly seen that the relations between the countries are based on mutual interest. Iran, the country exporting energy, is

34 Ibid.

supported against isolation by Turkey. The relations based on mutual interest can be examined on the basis of interdependence. Therefore the economic relations can provide political cooperation on the basis of neo-functionalist theory.[35] Developing business connections and agreements between Turkey and Iran has kept alive the hopes about Nabucco. Therefore the country has emerged as an important potential supplier for the Nabucco Pipeline Project.

3.4 Emerging Actor: China

When alternative resources are evaluated for EU energy dependency, in order to make an accurate assessment, China should be taken into account in terms of the growth and energy consumption simply because China is one of the biggest energy consumers in the world. In parallel with rapid development, the increased energy demand makes China increasingly dependent on foreign energy sources.

China's annual oil consumption is increasing by 7,5 %. If the growth rate continues at current levels, China's oil needs will increase by 150 % by 2020. In terms of oil imports, China is mostly dependent on the Middle Eastern

35 Iranians have difficulty in living with the Iran government. In recent days civil rebellions and changing of administrations in Lebanon, Egypt, Syria and other Arab countries showed that the possibility of rebellions against to the government in Iran. On the other hand, there are diffrent alternatives on the table for future of relationships with Iran such as military intervention by USA. At this point, the policy of Turkey may cause softening domestic and foreign policy of Iran. This interaction between the countries may affect the reform process in Iran. The relations can strengthen the hand of Turkey for relations with EU and the countries in the region.

region. 58-60 % of the imported oil by the country was provided from the Middle East. It is predicted this rate will be 70 %.[36]

China wants her economic growth to turn into a global power and she needs more energy day by day; so much so that China has been interested not only in the Middle East but also Central Asia, Africa, Russia and other areas for her own energy needs. The Country will make even more risky investments than other countries. In addition, some experts in China have claimed that China should focus on closer regions instead of the Middle East. In this point, closer regions are more stable and secure than others. Developing relations with Central Asian and Caucasus countries also are going to contribute to regional development and security.

At that point energy relations of China with the countries should be examined carefully. China has three thousand kilometer borders with Central Asian countries. She is opposed to increased nationalist and Islamic trends in the region. The country has supported the present status quo to help in putting her energy projects into effect. Kazakhstan, Uzbekistan, Turkmenistan and China have evaluated China as the most important market

36 Institute for the Analysis of Global Security, "Fueling the dragon: China's race into the oil market", http://www.iags.org/china.htm, accessed date: July, 27, 2011

in the economic area and the most important player to balance Russia in the political field. Despite the appearance that China and Russia seem to be a rival to each other, the increasing energy demand of China can turn the relationship into a systematic co-operation.[37] Thus, if energy trading of these countries with Russia and China doesn't decline, exporting gas to the west will not be a necessity for the countries. At this point, accounts of the EU in the region can be confused by China rather than the instability of the region.

37 David Howell and Carole Nakhle, "Out of the Energy Labyrinth: Uniting Energy and the Environment to Avert Catastrophe", London, I.B. Tauris, 2007, p. 105-106.

CHAPTER 4

THE ENERGY POLICY OF TURKEY

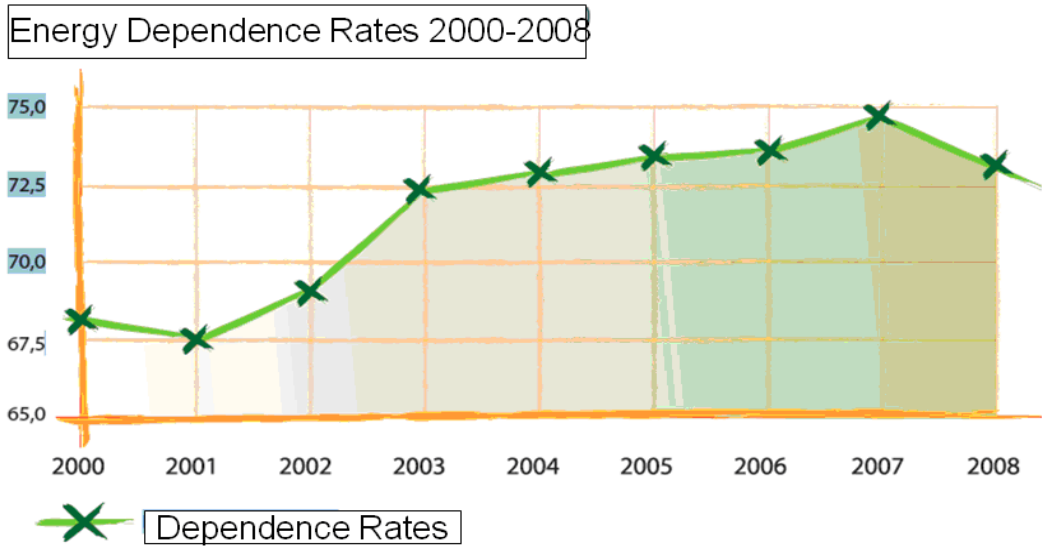
4.1 Energy Profile of Turkey

Turkey's increasing energy demand is second only to China's. As a result of growth of GDP, all of the data show that, Turkey's energy consumption and rate of import are in a state of rapid growth. Although increasing it's share of renewable energy sources, planning of nuclear energy power plants in parallel with EU energy policy, it is increasing it's usage of fossil fuel in total energy consumption.

Turkey has imported 74 % of her own energy requirement (see figure 5). So that primary energy policy of the government is energy security. This is considered more important than market reforms or environmental protection. On that point, the highlight of the policy is energy diplomacy with supplier countries in the region such as Russia, Iran, Iraq, Egypt, the Caspian region and Central Asia.

Turkey has imported most of her own natural gas requirement from Russia, and so Russian energy policy is important for Turkey. At this point Turkey should act within a balanced and rational policy.

Figure 5: Energy Dependence Ratio of Turkey in 2008



Sources: 2010–2014 The Strategical Plan of Ministry of Energy and Natural Resources (Turkey)

Although Turkey is an energy importer; she is frequently evaluated when attempting to create some alternatives for EU energy dependency. The reason of this is her geo-strategic location. Turkey is surrounded by energy producer countries on the east and energy consumer countries on the west. In the context of energy security, the privileged position of Turkey has provided some opportunities and responsibilities for Turkey. Turkey has aimed to come in fourth after Russia, Norway and Algeria for EU. The conditions force Turkey to make long-term and multiple energy policy. There are still many natural gas and oil pipeline projects establishing Turkey in the region. (See table 8 and 9)

4.1.1 Oil & Pipelines

Turkey is playing an increasingly important role in the transit of oil supplies from Russia, the Caspian region, and the Middle East to Europe; with the Turkish government deriving significant revenues from the transit fees.[38]

Table 8: Status Oil Pipelines in Turkey

Project	Status	Length (miles)	Max. Capacity/million bbl/d
Baku-Tbilisi-Ceyhan Pipeline (BTC)	In operation	1.100	1.2
Kirkuk-Ceyhan Pipeline	In operation	600	1.65

Source: EIA

38 EIA, "Country Analysis Brief: Turkey", February, 2011, http://www.eia.gov/countries/cab.cfm?fips=TU, accessed date: 22.07.2011

4.1.1.1 Baku-Tblisi-Ceyhan Pipeline

Figure 6: Baku-Tblisi-Ceyhan Pipeline

Source: BP

This is considered the most successful pipeline which created by Turkey. The longest crude oil pipeline in Turkish possession is from the Azeri-Chirag-Guneshli oil field in the Caspian Sea to the Mediterranean Sea. It connects Baku, the capital of Azerbaijan; Tbilisi, the capital of Georgia; and Ceyhan, a port on the south-eastern Mediterranean coast of Turkey.[39]

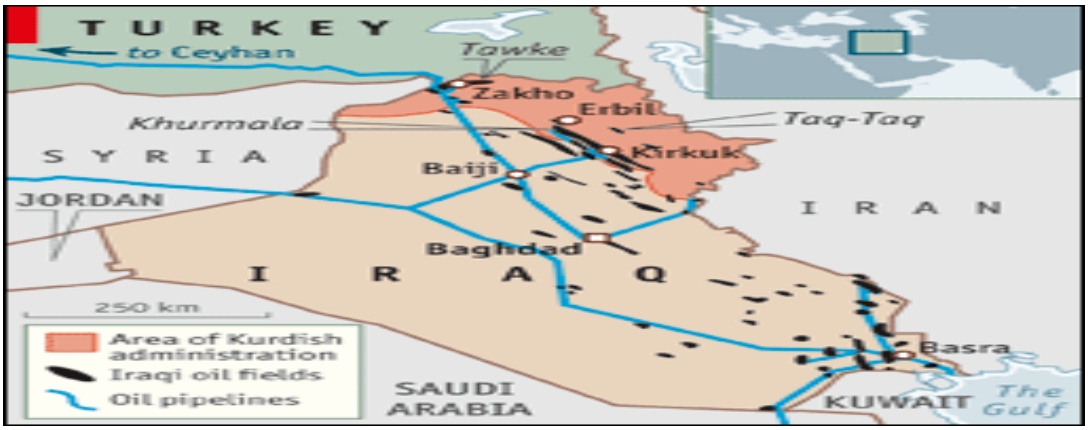
There is some discussion about the pipeline such as the possibility that Kazakhstan and Turkmenistan's resources can not be included in the pipeline and the risk of a conflict that may occur in the Caucasus. These

39 SGS Group, "SGS Successfully Conducts Non-Destructive Testing for the Baku-Tbilisi-Ceyhan (BTC) Pipeline Project under Extreme Conditions", 23/11/05 http://www.ndt.sgs.com/sgs-experience-from-the-baku-tbilisi-ceyhan-pipeline-project-ndt?viewId=10059859, accessed 02.12, 2010

developments can impair the efficient operation of said pipeline. Contrary to discussion, current developments[40] showed that BTC has been successful. The capacity of BTC crude oil pipeline was up from 1 million barrels to 1,2 million barrels a day.[41]

4.1.1.2 Kirkuk Ceyhan Pipeline

Figure 7: Kirkuk Ceyhan Pipeline



Source: NA

This pipeline has known also "Iraq–Turkey Crude Oil Pipeline". After the Iraq war, it has been accepted that it is easy to be sabotaged the pipeline.

40 The Minister of Energy and Natural Resources, Taner Yıldız gave the directions about the doubts to deal with the capacity of the pipeline in a meeting which was about Turkey's Energy Vision, at the Organization of International Strategic Research (OISR) Instiution. He explained that BTC has a capacity of five million barrels per year and the capacity hasn't reached full capacity yet. It just satisfied the need. He countined the explainations the following words " *At the end of last week, we made a new agreement with Azerbaijan and Kazakhstanregarding a new agreement to increase the oil capacity for the pipeline."* for further information see Anadolu Ajansı,"BTC OIL PIPELINE- -Baku-Tbilisi-Ceyhan crude oil pipeline ships nearly 1,240 million barrels of oil since 2006" http://www.aa.com.tr/index.php?option=com_haber&popup=hayrinti&haber_id=271668, July, 25, 2011, accessed date: 21.08.2011

There are often interruptions on the line and it can not be used to full capacity.

The Iraq - Turkey Crude Oil Pipeline System transports the oil produced in Kirkuk and other areas of Iraq to the Ceyhan (Yumurtalık) Marine Terminal. The operation of the pipeline system was suspended on August 1990, in conjunction with the embargo imposed on Iraq by the United Nations. The suspension was ceased under the agreement of UN and Iraq on May 1996 and limited oil export has been allowed since then. Crude oil loading activities were initiated on December 16, 1996 under the UN Resolution. 132,278 thousand barrels of oil were transported by this line in 2010.[42] The period of the pipeline agreement was ended in March 2010; the agreement has been extended for 15 year by Ministers of the countries on September 19, 2010.[43]

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42 BOTAŞ, "Iraq-Turkey Oil Pipeline" http://www.botas.gov.tr/index.asp, accesed date: 03.08.2011.

43 Iraq's Minister of Oil has also explained that the capacity of the pipeline could be doubled in that meeting. He has continued as follows " Iraq is developing her oil wells, second pipeline could be needed. If Turkish companies participate in this project, we will be glad for it. For further information, see: İşten Haber, *"Kerkük-Yumurtalık ham petrol boru hattı anlaşmasının süresi uzatıldı",* September 19, 2010. http://istenhaber.com/2010/09/19/kerkuk-yumurtalik-ham-petrol-boru-hatti-anlasmasinin-suresi-uzatildi/. accessed date: 13.02.2011

4.1.1.3 Bosporus Bypass Options

Figure 8: Bosporus Bypass Options

Source: US Government

The 19-mile long Bosporus Straits, only a half mile wide at its narrowest point, is one of the world's busiest shipping lanes.[44] The straits are also increasingly an important oil transit point, with oil tankers bringing shipments from the Black Sea to the Mediterranean for export. The BTC Pipeline is the first of several bypass projects under consideration over the last decade to have materialized.

Another project currently under consideration is the Samsun-Ceyhan bypass, which would transport oil from Turkey's Black Sea port of Samsun to

44 The Robert S. Strauss Center, Strait of Hormuz, "Other Chokepoints", http://hormuz.robertstrausscenter.org/other_chokepoints#_ednref1, accesed date: 22.07. 2011

Ceyhan on the Mediterranean coast. Turkey's Council of Ministers gave initial approval to the construction of the planned 350-mile, one million bbl/d line in May 2006. The project is being developed by a 50–50 joint venture between Italy's Eni and Turkey's Calik Energy, called the Trans-Anatolia Pipeline Company (TRAPCO), which as of September 2006 holds the only Turkish government license to develop a Bosporus bypass project. Eni holds an 18,5 percent interest in the Kashagan oil field in the Kazakh section of the Caspian Sea, which would likely be a primary source for the Samsun-Ceyhan pipeline.[45]

45Encyclopedia of Earth, Energy profile of Turkey, July 10, 2007, http://www.eoearth.org/article/Energy_profile_of_Turkey, accessed date:18.02.2011.

4.1.2 Natural Gas & Pipelines

Table 9: Status of Natural Gas Pipeline Projects in Turkey

Project	Status	Length (miles)	Maximum Capacity/ (million bbl/d)
Blue Stream	In operation	750	565
Iran-Turkey	In operation	750	495
South Caucasus	Under construction	430	700
Turkey-Greece-Interconnector	Under construction	186	407
Nabucco	Proposed	2,050	460–1100
Egypt-Turkey	Proposed	-	-
Trans-Caspian	Canceled	1,050	565

Source: Encyclopedia of Earth

4.1.2.3 Blue Stream Pipeline

Although there is no problem in terms of accessing natural gas from Russia, the pipeline is the most expensive way to buy natural gas. Another disadvantage of the pipeline is the absence of the right to sell the natural gas

for Turkey. Blue Stream is a major trans-Black Sea gas pipeline that carries natural gas from Russia into Turkey. According to the agreement which was signed in 1997 between Ankara and Moscow, 16 billion cubic meters of natural gas purchase per a year from Russia to Turkey with the pipeline.[46] On the other hand, the pipeline is criticized because of the increased dependence on Russia.

4.1.2.4 Iran-Turkey Pipeline

In January 2002, Iran and Turkey officially inaugurated a natural gas pipeline link between the two countries, following several years of delays. The line runs from Tabriz in Iran to Ankara, the capital city of Turkey.[47] Although its transportation capacity of the pipeline is 30 million cubic meters per a day, 24 million cubic meters of natural gas per day was transported from Iran to in 2010.[48]

46 FAQ, Volkan S. Ediger, " Turkey-Russia Energy Relations: Same Old Story, New Actors", July 1, 2010 acessed date: 28.06.2011

47 Encyclopedia of Earth, Energy profile of Turkey, July 10, 2007, http://www.eoearth.org/article/Energy_profile_of_Turkey, accessed date: 18.02.2011

48 Sabah, "Türkiye-İran doğalgaz boru hattında patlama" July, 29, 2011. http://www.sabah.com.tr/Gundem/2011/07/29/turkiyeiran-dogalgaz-boru-hattinda-patlama, accessed date: 29.07. 2011

4.1.3 Planned or Proposed Pipelines

Several gas pipelines are being planned to export Central Asian gas to europe via Turkey. The most important of them is Nabucco project according to its capacity to decrease the EU energy dependency.

Figure 9: Planned or Proposed Pipelines

Sources: NA

4.1.3.1 Nabucco Pipeline

This pipeline is the most important project to reduce energy dependence on Russia for the EU. But there are some doubts about necessary resources of natural gas for the pipeline. The pipeline will link the Eastern border of Turkey, to Baumgarten in Austria - one of the most important gas turntables

in Central Europe - via Bulgaria, Romania and Hungary. The construction of the pipeline was supported by the 2009. Intergovernmental agreement signed in Ankara in July 2009, which harmonized the legal framework and grants stable and equal transport conditions for all partners and customers.[49]

The project is supported especially by USA and Europe Union, to create an alternative against to the largest supplier of natural gas, Russia. On the other hand it is claimed that the project was interrupted by long-term agreements between Russia and Central Asia, the largest natural gas suppliers in the line of the countries such as Kazakhstan, Turkmenistan. The Nabucco consortium has attempted to make agreements for buying natural gas (31 billion tonnes) from Azerbaijan, Turkmenistan and Kurdish region of Northern Iraq. To operate at full capacity of natural gas production in the Nabucco, another supplier country is Iran. However the uncertainty of resources for the Project maintains so that The Nabucco gas pipeline consortium expects construction to start in 2013, the start of commercial transport in 2017[50]

49 Azerbaijan Business Center, "Nabucco gas pipe consortium welcomes goals of European Commission President's trip to Azerbaijan and Turkmenistan", http://abc.az/eng/news/50787.html, accessed date: 02.11.2010

4.1.3.2 South Caucasus Pipeline

This pipeline is known as Baku- Tiblisi- Erzurum pipeline by the public. The South Caucasus Pipeline has been designed to transport gas from the Shah Deniz field in the Azerbaijan sector of the Caspian Sea, through Georgia and on to the Georgia-Turkey border51. It follows the route of the Bakû-Tbilisi-Ceyhan (BTC) crude oil pipeline through Azerbaijan and Georgia to Turkey, where is linked to the Turkish gas distribution system. First deliveries of gas to Turkey commenced on 30 September, 2006. The expansion of the South Caucasus Pipeline is part of the Shah Deniz Full Field Development project. This expansion will involve the laying of new pipeline across Azerbaijan and the construction of two new compressor stations in Georgia. At the border between Georgia and Turkey, the pipeline will link into other new pipelines to provide gas into Turkey and the European Union. This would triple the gas volumes exported through the pipeline to over 20 billion cubic meters per year. [52]

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50 Reuters, "Nabucco sees commercial gas transport start in 2017", May 6, 2011, http://www.reuters.com/article/2011/05/06/nabucco-gas-idUSLDE7450JI20110506, accessed date: 21.05.2011.

51 Republic of Turkey, Ministry of Foreign Affairs, "Turkey's Energy Strategy" Deputy Directorate General forEnergy, Water and Environment, January 2009 http://www.mfa.gov.tr/data/DISPOLITIKA/EnerjiPolitikasi/Turkey's%20Energy%20Strategy%20(Ocak%202009).pdf accessed date: 15. 04. 2011

52 BP, South Caucasus Pipeline, "Supplying gas to meet the needs of regional consumers", http://www.bp.com/sectiongenericarticle.do?categoryId=9006670&contentId=7015095, accessed date: 21.02 2011.

4.1.3.3 Turkey-Greece-Italy Interconnector

The Turkey – Greece – Italy Interconnector (ITGI) consists of three portions, one linking Turkey with Greece, which was commissioned in 2007, a second pipeline in Greece and a third offshore pipeline from Greece to Italy crossing the Adriatic Sea (Poseidon Project). It is planned that each country would manage the portion of the pipeline running through its territory ensuring the transit of gas to its neighbor.

In July 2007, a trilateral agreement between Italy, Greece and Turkey was signed, setting out a commercial framework for gas trade and transit. The Turkey-Greece Interconnector is a 295 km link between Karacabey in Northwestern Turkey and Komotini in the eastern part of Greece. This pipeline was successfully inaugurated in November 2007 and Azeri gas reached the EU market for the first time. Maximum capacity of the pipeline is designed to reach 11,5 bcm per year. Early deliveries from Turkey to Greece are relatively small (0.25 bcm). However, they mark a symbolic step towards the completion of the fourth corridor in southeast Europe.[53] The project is scheduled to be completed by 2017. Therefore, it is expected that Bulgaria, Serbia and Romania may attend to the project directly or indirectly in the future.

4.1.4 Liquefied Natural Gas

LNG is principally used for transporting natural gas to markets, where it is regasified and distributed as pipeline natural gas. LNG offers an energy density comparable to gasoline and diesel fuels and produces less pollution, but its relatively high cost of production and the need to store it in expensive cryogenic tanks has prevented its widespread use in commercial applications. It can be used in natural gas vehicles, although it is more common to design vehicles to use compressed natural gas.[54]

Turkey imports liquefied natural gas (LNG) from Algeria and Nigeria at its LNG import terminal at Marmara Ereglisi in Istanbul and Egegeaz LNG terminal in Izmir. One option that Turkey has also considered is for the construction of an LNG liquefaction plant and export terminal at Ceyhan for the export of Russian natural gas from the Blue Stream Pipeline. This is one option to turn Turkey into a transit center, and a possible attractive project to manage potential oversupply of natural gas to the Turkish market in the years ahead.[55] It is predicted to increase LNG consumption in the next 20 years and expected to reach almost the same rate of consumption of natural gas in the world. On the other hand the law was amended to liberalized

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53 International Energy Agency, "Natural Gas Market Review", http://www.iea.org/textbase/nppdf/free/2008/gasmarket2008.pdf, page: 54, accessed date: 22.02 2011.

54 Enerxis, Powering the Energy Business, Industry Practices, "LNG", http://www.enerxis.com/en/industry practices/lng.php, accessed date: 25.02.2011

importation and spot of LNG so that monopoly of BOTAŞ (Petroleum Pipeline Corporation) is ended. Accordingly private sector can import LNG providing not to exceed 10 percent of annual national consumption. So that it is predicted to decrease costs of natural gas supply and provide security supply of natural gas.

[55] Encyclopedia of Earth, Energy profile of Turkey, July 10, 2007, http://www.eoearth.org/article/Energy_profile_of_Turkey, accessed date:18.02.2011.

CHAPTER 5

THE ROLE OF TURKEY FOR ENERGY DEPENDENCY OF EU

5.1 The Importance of Energy in Turkish Foreign Policy

In recent years, Turkey has maintained a "zero problem with neighbors" record in her foreign policy. She has primarily aimed to solve problems with the neighbors and significantly realized this aim. It is necessary to touch briefly on the subject: Turkey has provided visa free transit between some countries as Syria, Jordan, and Lebanon. She also has provided common Council of Ministers meeting with Syria and Iraq, started some initiatives to establish duty-free area. The Palestian people are supported by Turkey in the international arena with regards to reconstruction of the region and against the violence of Israel. She also has been conducted as mediator between Iran and the western countries, Syria and Israel.

When the energy policy of Turkey is evaluated, it is clearly seen that (unfortunately) the energy efficiency subject for Turkish Foreign Policy (TFP) has taken a long time to develop. Regional dynamics and global actors have taken interest in the region and the multinational energy companies have given the roles to Turkey on the region. Turkish Energy Policy has given consideration to some subjects such as renewable energy resources and energy efficiency in accordance with EU Legislations. Market liberalization is

emphasized by the policy. There are also enterprises to establish nuclear power plants to diversify energy resources. On the other hand, according to research on consumption, the role of fossil fuels will increasingly continue as in other countries. As a developing country, Turkey has not enough energy resources. The subject of security supply is considered as more important than other subjects. Turkey has a important role in all international projects so that she is evaluated as an actor in terms of energy. These projects are supported by TFP that lay stress on interdependence.

As in other countries, in Turkey the energy issue can not be evaluated as an independent issue. The energy infrastructure of countries directly depends on implementation of political decisions in a timely manner. In a country, almost all the economic issues and initiatives such energy subjects are subject to the political atmosphere. Energy investments are long-termed and they are responsive to political uncertainties.

The energy subject has constituted the main dynamics of TFP. Projects such as "Energy Bridge" or "Energy Terminal" which are supported by the EU and the USA can not be successful without diplomacy on top level management. In this context, for example, BTC should be considered as a diplomatic success as well as a world-class engineering firm so that certain coordination should be continued by the Ministry of Foreign Affairs and Ministry of Energy.

There are many pipelines and agreements in the field of energy between Turkey and Russia[56], countries in Middle East[57], Central Asian and Caucasus Countries[58]. Nowadays, Turkey has sustained diplomatic contacts for some

56 **Russia:** The first energy agreement signed between Turkey and Russia was in 1984. Turkey has been importing natural gas from Russia (USSR) since 1987. The Western pipeline which conveys via Romania and Bulgaria between Turkey and Russia and Blue Stream Natural Gas Pipeline which gets under Black Sea and reaches to Turkey have been active. In addition, there are also signed agreements which provide to transport Russian oil to Mediterranean sea, Samsun - Ceyhan Crude Oil Pipeline and provide establishing a terminal at Ceyhan. Besides The Blue Stream Natural Gas Pipeline I, the negotiations continued between the authorities of the two countries to construct Blue Stream Natural Gas Pipeline II which is planned to extend to Israel.

On the other hand Turkey has given permission to Russia to conduct geological research on her own territorial waters of Black Sea for South Stream natural gas pipeline. It can be seen that energy relationship between Russia and Turkey has centered on Black Sea. Making negotiations between the states have continued to cooperate for the subjects of electricity and nuclear energy.

57 **Middle East:** One of Turkey's influences in the regions is Middle East. It can be seen that Turkey has increased its influence in the region in recent years. Active foreign policy of Turkey in the Middle East is also supported by energy policies. When Turkey is increasing the influence of her own energy policy, she is enhancing her political influence. Turkey is also interested in the development of Iraqi natural gas reserves. It is possible to link Iraqi natural gas to national network of Turkey by another pipeline which would be parallel to Kirkuk-Ceyhan Oil Pipeline with taking advantages of the pipeline's transit right. After withdrawing of the USA, it is possible to emergence a conflict between Arabs and Kurds in Iraq. This will introduce the necessity of re-evaluation security policy and all the energy maps in the region. After USA, Turkey should continue to increase her actions on the country.

The Others: Turkey has tried to change the form and spirit of the Nabucco Project. There are alternative possibilities of natural gas resources for Nabucco project as resources of Turkmen, Iran and Egypt. In this framework, Turkey has worked to implement some projects in the region. The Arab Gas Pipeline (AGP) exports gas from Egypt to Jordan, Syria and Lebanon, and work is underway to extend it to Turkey where it would join the gas pipeline network.

On the Other hand, a natural gas pipeline which has an annual capacity of 10 billion cubic meter is available between Iran and Turkey. Turkey also signed a new natural gas agreement with Iran. Turkey has permit right of production and export for Iran's Pars natural gas resources.

58 **Central Asian and Caucasus Countries:** Turkey is also a neighbour to the Caspian region which has rich energy resources and there is the subject of transferring the resources to western markets. In this context, the Bakû-Tbilisi-Ceyhan Crude Oil Pipeline Project came to life in the nineties. At that period, the project was basic competition area between the countries. Today, BTE which transports the natural gas from the Shah Deniz to

projects such as Nabucco Gas Pipeline Project, Samsun Ceyhan Crude Oil Pipeline Project, Turkey-Greece-Italy Gas Pipeline Project, to ensure realization of the projects. Through the projects, Turkey wants to be the fourth main artery after Norway, Russia and Algeria for the supply of natural gas in Europe, so that Turkey-EU relations will open up a new field of cooperation. This cooperation makes links between Asia and Europe stronger.

It can be clearly seen that Turkey is the only country which connects Russia, Caspian region and Middle East region to the Europe. The unique position of Turkey in the region compels her to implement an active foreign policy. The foreign policy and energy applications of Turkey also have tried to serve regional peace and energy supply security in the region. The policy of "zero problems with neighbors" which is applied by Turkey is in step with the role of energy corridor. Turkey has aimed to turn its own geography to peaceful regional results with this policy. This policy is supported by energy projects to increase the corridor role of Turkey in the region and will serve to

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western markets has been implemented. This project has also linked with Greece. On the region, a Trans-Caspian pipeline which would pass from the bottom of the Caspian Sea region has also be planned to build. At the same time Trans-Caspian Pipeline is one of the most important pillars in the Nabucco line. Although Turkey has supported to South Stream Natural Gas Pipeline Project which competes to Nabucco Gas Pipeline Project, regional facts have showed that there is still competition between the two lines.

Besides Turkey's policy for the Caspian region, there are a regional peace initiatives. The best a sample of the initiatives is the relations between Turkey and Armenia. If there is an progress in the case of Nagorno-Karabakh, there is a possibility of Nabucco would turn into a regional peace line through Armenia.

be the determinative power of Turkey. The concept of corridor deals with interdependence so that it is quite compatible with TFP.

5.2 Turkey is not only Bridge but also Determinative Power in the Region

One of the subjects in concern with energy dependency of Turkey is economic dimension. Energy import of Turkey has increased the current deficit. Although planning to increase share of renewable resources and establish nuclear energy power plants in parallel EU Energy Policy, these steps are not qualified to replace fossil fuels in the future. Share of fossil fuels will continue to increase in total energy consumption.

In terms of energy, Turkey depends on Russia like the EU does. Although She collaborates with him, Turkey has attempted to create an alternative to Russia on the subject of energy so that multi-dimensional energy policies are supported by the Turkish Government. Turkey has good relations with Azerbaijan and Iran, despite Russian domination in the Central Asia and Caucasus or objection of USA against to Iran. In addition to the relations, Turkey has aimed to be fourth main artery for Europe in terms of energy. This goal is supported by the EU and the USA. Related Turkish ministries[59]

59 Hürriyet Economy, "Davutoğlu: Köprü değil, yönlendireniz", http://www.hurriyet.com.tr/ekonomi/14801161.asp, accessed date: 12.08.2011

have put forward the aim of determinative power rather than an energy bridge.

Turkey and the EU have insisted on building especially pipelines via Turkey to Europe. On the other hand, the attempts made by Russia to reach the Asian market (via Turkey and Israel) have resulted in Blue Stream Project II; which would go from Russia via Ceyhan to Israel. If the project is completed, Turkey will import natural gas from Russia with the western pipeline which is via Thrace and Blue Stream I and Blue Stream II. Otherwise, Samsun- Ceyhan oil pipeline which would decrease the threats on the straits as has been decided by Turkey and Russia. It is possible Kazakh oil could be involved in the pipeline. The multi-centered approach of Turkey has supported this security of supply policy. The approach has aimed to make the role of Turkey that of an energy crossroads and then the energy center like Rotterdam.

It is so planned that Ceyhan be "an energy hub" with the pipeline projects and LNG terminals. The hub means that is a trade center to determine the cost of the energy. Does Ceyhan really have the potential to be an energy hub like Rotterdam? What should be done to be an energy hub?

Rotterdam is the fourth largest port in the world and first port of Europe. It is crossing point of conceivable kind of goods with 34.000 ships per a year. It has 430 millions tones of goods flow.[60] One quarter of all goods flow, is crude oil. Because of that, the port can give direction to european energy market.

In 2010 the Port of Rotterdam Authority invested 370 million euro in the port. About half of this went into infrastructure in the existing port area, whilst the other half is earmarked for Maasvlakte 2. Some hefty investments also need to be made for the medium and long term. Between 2010 and 2020, the Port Authority expects to invest some 4 billion euro.[61] Projections are planned for 15–10 years, especially for infrastructures. Important part of planning is spent for expansion of the port infrastructures. One million euro is transferred to expand the port per year. This budget will be two million euro in coming years.

In Ceyhan teind of planning refinery, shipyard and the thermal plants have come to fruition. The Ceyhan Port has been planned so as to have the capacity of approximately 40–50 million tones, per a year. The capacity will

60 Port of Rotterdam, "About the Port of Rotterdam", http://www.portofrotterdam.com/en/port/Pages/default.aspx, accessed date: 22.07.2011.

61 Port of Rotterdam, "Half-Yearly Report", 2010, http://www.portofrotterdam.com/en/Port-authority/finance/Documents/Half_yearly_Report_2010.pdf, accessed date: 22.07 2010

reach about 100 million tons, per a year by the extension of the port.[62] It has not taken action to receive industrial investments yet. Ceyhan needs long term planning and more investments to have a say in European energy market. Briefly, it does not seem possible compare with Rotterdam in a short time.

5.3 Effect of Energy Policy on Relations Between EU and Turkey

The process of the European Union has been one of the most important part in TFP for a long time. This process started with the Ankara Agreement signed on September 12, 1963. In the first years the relations was about security due to the Cold War, It has become socio-economic dimensions since 1980 with the period of Turgut Özal.

The role of energy in relations between EU-Turkey was at almost zero. Despite the energy dependency of the EU, Turkey had no important role for the issue. The energy pipelines have reached Western Europe via Russia and Algeria. By the 2000s, the importance of Turkey has increased regarding the EU's security of supply. Especially after the crisis of cutting gas by Russia, EU has focused to diversify energy resources. When it is evaluated, the geographical position of Turkey indicated that she should be a partner of key

62 Ceyhan Enerji Merkezi, "Proje'nin bileşenleri", http://ceyhanenerjimerkezi.com/projenin_bilesenleri.html, accessed date: 15.05. 2011

strategic importance for Europe, in terms of security, stability and prosperity. This is particularly true for energy, where both sides stand to gain from closer cooperation.

The EU and Turkey are united by common concerns about securing reliable and affordable energy supplies for their societies, which are vital for their proper functioning and growth. Several gas pipelines are being planned to export natural gas to Europe via Turkey, which will help EU's dependence on energy imports over the long term. On the other hand Turkey has aimed to realize an "energy hub" status with energy cooperation with EU in the region. Thus, foreign policy with the multi-partner can be placed on more rational grounds, and cooperation with regards to the energy industry can accelerate the EU accession process. When emphasizing importance of energy for EU, it should be kept in mind that the European Union was organized by reasons of energy cooperation in the beginning.

In fact, some European officials and politicians have claimed that security supply of the EU can not be evaluated without Turkey.[63] Also it is claimed that the importance of Turkey for the energy can simplify Turkey's membership. Indeed, the importance of Turkey can be read on a document prepared by European Parliament. Some subjects such as the role of Turkey

as a energy partner to EU, energy cooperation between EU and Turkey, Turkey's Programme for Alignment with the Acquis were evaluated under the title of "EU-Turkey relations in the field of energy". The following statements are important in order to understand the importance of Turkey for the EU, in terms of energy:

"The potential of Turkey to become an important country for oil and gas transit from Russia, the Caspian Sea region and the Persian Gulf adds to the strategic importance of Turkey to the EU. Turkey also connects the EU with the Middle East and is an important player in the Mediterranean. Also in this context, political-strategic considerations play often an important role in discussions about Turkey's future EU membership or closer relations with the EU."[64]

Increasing the role of Turkey is not only about her own location. Turkey has a stronger economy than in the past. Her advances regarding energy transport, her sufficient manpower and stable political, economic, social structures have emphasized Turkey's political importance. In retrospect,

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63 EU, European Commission, "Turkey as an energy hub for Europe: prospects and challenges" - Speech by EU Commissioner Rehn, http://www.europa-eu-un.org/articles/en/article_8535_en.htm, accessed date: 15.05.2011

64 European Parliament, Directorate General External Policies of the Union, "EU-Turkey relations in the field of energy", 2006. http://www.europarl.europa.eu/meetdocs/2004_2009/documents/fd/d-tr20060425_06/d-tr20060425_06en.pdf, accessed date: 28. 07. 2011

For further information, see also: EU, European Commission, "Turkey's Energy Strategy" http://ec.europa.eu/enlargement/pdf/european_energy_policy/turkeys_energy_strategy_en.pdf, acceseed date: 27.05.2011

there were many attempts to establish pipelines in the region. However the majority of them have failed. The lack of investment and the uncertainty of resources for the projects have reduced the role of Turkey. Turkey can not use the card of energy efficiently in the process of EU negotiations. The EU has continued relations with Ankara as an third country. However the realization of the projects and creation of a real alternative in terms of energy, it is inevitable that Turkey has a strong hand. This will increase interdependence and also strengthen cooperation in many areas and affect the negotiation process.

CHAPTER 6

RESULTS AND CONCLUSION

6. Conclusion

Within the scope of this thesis, it is studied whether or not Turkey can create alternative resources to energy dependence of the EU. Turkey is located in the center of all projects because of her geo-strategic importance. Virtually the borders of Turkey have been designed accordingly to this. The border countries of Turkey are evaluated with the capacity of their energy resources and political situation. The results achieved are following as:

Central Asian and Caucasian countries: At the point of creating an alternative to Russia, there is a lack of resources for the projects. For economic cooperation, the political actions were not performed to cooperate Central Asian and Caucasian countries by Turkey on time in the past. Despite the political delays, Russian domination has continued in the region. Except for Azerbaijan and Turkmenistan, sufficient source for the project can not be found. However, it is not possible to create an alternative to Russia in terms of their resource capacity. The exporter countries would rather sell their gas to Russia. Therefore they also prefer using pipelines to Russia to transfer their resources. On the other hand, the countries have exported their gas to China and India so that there is no marketing problem of their resources. For

all these reasons, the EU should hold Central Asia and Caucasus region on the border not on the center of its energy policy.

Iraq: When we evaluate other neighbors of Turkey, Iraq can not be evaluated as an alternative resource for the projects in a short period because civil war has continued in the country. Therefore, oil law has not been approved in the parliament of Iraq yet.

Iran: Despite all efforts of the USA, the geopolitical importance of Iran (which is placed in the middle of the energy projects) remains insolated from the international system. Iran has tried to produce nuclear energy for domestic demand in order to export more resources than its current export rates. Proven reserves of the country need to be developed by investments. At this point, despite the objections of USA, the relations based on mutual cooperation between Turkey and Iran has continued. Moreover, Turkey has tried to include Iran in Nabucco Project. On the other hand the EU has not closed its doors against to Iran like USA. Secondly, the functionality of the natural gas pipeline projects[65] including Turkey was examined in this thesis. The role of Turkey for reducing the energy dependency of the EU is

65 In order to reduce C02 emmission in accordance with Kyoto Protocol, it is planned to decrease oil consumption in the EU countries. So that natural gas pipelines are studied in detailed in this thesis, in terms of natural gas minimum damaging character for the environment, importance of its consumption is increasing for EU Energy Policy.

researched with the projects supported by the USA and the EU. The results achieved are following as:

"Energy Security" in other words "Prevention of Russia's transit monopoly" is among the strategic priorities of EU. According to data from Gazprom, Russia has exported 148.1 bcm[66] natural gas to EU in 2010 (see table 10). At that point, it can be said that if only Nabucco worked at full capacity (31 bcm) in 2010, the dependence on Russia would be decreased 20,9 %.

Table 10: Russia Natural Gas Imports by EU- Country in 2010 (bcm)

Country	Sales Volume	Country	Sales Volume
Germany	35.3	**Romania**	2.6
Turkey	18.0	**Bulgaria**	2.3
Italy	13.1	**Others**	2.1
Poland	11.8	**Greece**	2.1
UK	10.7	**Serbia**	2.1
Czech Republic	9.0	**Croatia**	1.1
France	8.9	**Belgium**	0.5
Hungary	6.9	**Slovenia**	0.5
Slovakia	5.8	**Switzerland**	0.3
Austria	5.6	**Bosnia and Herzegovina**	0.2
Finland	4.8	**Macedonia**	0.1
Netherlands	4.3		

Source: Gazprom

66 Gazprom, "Gazprom in Foreign Market", http://www.gazprom.com/about/, http://eng.gazpromquestions.ru/index.php?id=4, accessed date: 12.08.2011

Total capacity of all planned natural gas pipeline projects are 102,5 bcm (see table 11). In other words, if the all projects[67] including Turkey worked at full capacity, EU dependency on Russia would be reduced by 69,2 percent. Excluding cancelled projects, the reducing rate is 48,9 percent. In addition to the figure, capacity of Hub and LNG facilities in Ceyhan, it can be clearly understand the importance of Turkey for EU.

Table 11: Capacity of the Natural Gas Pipeline Projects Including Turkey to EU

Project	Status	Maximum Capacity
South Caucasus	Under construction	20 bcm
Turkey-Greece-Interconnector	Under construction	11,2 bcm
Nabucco	Proposed	31 bcm
Egypt-Turkey	Proposed	10 bcm
Trans-Caspian	Cancelled	30 bcm
Iraq-Turkey	Cancelled	Na

Sources: **BOTAŞ and *BP

67 The projects are South Caucasus, Turkey- Greece Interconnector, Nabucco, Egypt-Turkey, Trans-Caspian Pipelines excluding Iraq- Turkey. Because of non applicable of the pipeline capacity.

Thirdly we examine how Turkey can increase her power in relations within the own region and with the EU by force of the projects in the thesis. The following conclusions are reached as:

The aim of Turkey has been to expand from the energy terminal to determinative power by support of the EU and the USA and successful projects. For being the determinative power, the hub potential of Ceyhan has been discussed for a long time. However, the lack of investment and lack of long-termed planning cause to leave in suspense the projects. Despite the transit fees from projects, if Ceyhan became a energy hub Turkey will be a country with the power to determine energy prices. It is inevitable that Turkey became a determining power in its relations with EU and the neighbors in her own region.

At that point Turkey should continue to be a place for more energy projects with high-level diplomatic negotiations to reach sufficient resources and investment. Multi-dimensional energy and foreign policy should be maintained both in her region and EU. With the energy cooperation, Turkey can increase her power on the region and international area, and economic relations can strengthen relations in an international respect on the basis of neo-functionalism.

On the other hand, to illustrate the realization of the projects will bring the security problem of pipelines. It is well known that the exporter countries are challenging terrorism and inner conflicts. Domestic problems in the countries including Turkey will be connected to each other like pipelines. Pipelines will cause to increase the interdependence between the states. In other words, all conflicts will be a matter for each country. In this sense, countries in the region will cooperate in terms of politics for security of the pipelines. The same is true for the EU which is the other end of the pipeline. For instance, the terrorist organization PKK (Kurdistan Workers' Party) will be a problem for the EU, too. In this sense, empathizing will be politically inevitable. This means stronger relations between the states.

Finally, when underlying the geostrategic importance of Turkey, some other important results are reached. For instance, economic relations with Iran can lead to moderation in political area. The role model of Turkey can be accepted by the population of Iran. On the other hand, the changing of the government or intervention in Iran is equally probable for the country.

Turkey is like a hand of Iran to try reaching to Europe. In the contrary case, if Turkey abandons the mediator role for Iran, Iran will more focus on Asian market. Because Iran has no marketing problem with its resources as well as EU needs energy. On the other hand Russia is pleased that Iran is currently focusing on the Asian market and supported it. Thus Russia can

continue to be a leader in European market and prevent China from heading for the resources of Central Asia.

If the relationships between Russia, China and Iran become a long-term convergence these countries will be in a position to determine the direction of global dynamics not only in the field of energy but also in the field of economy and international politics. It means that the relations can create a more dangerous situation than the problem of security that depends on developing nuclear energy by Iran.

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