CERE

Centre for Russia and Eurasia, Athens, Greece

Analysis of the Oil- and Gas-Pipeline-Links between EU and Russia

An account of intrinsic interests

By: Ksenia Borisocheva

November, 2007

Table of Contents

The European Union and Russia are extremely interdependent in terms of their respective energy policies. The EU is currently dependent on energy from imports by a factor of 50 percent, 25 percent of which originate in Russia. If no major changes in the policy regarding alternative energy sources occur the EU overall dependence on energy imports is expected to climb to 40-70 percent by 2030 according to various predictions.[1] On the other hand, Russia holds the world's largest natural gas reserves of 47.55 trillion cubic meters as well 60 billion barrels of proven crude oil reserves.[2] EU member states are the premier destination of Russian energy resources, consuming 70 percent of Russian energy exports and, thus, providing for the much needed national budget capital of the country.[3]

The transportation infrastructure, i.e. oil- and gas-pipelines, plays a vital role in this relationship of interdependence. The existing and projected routes offer the possibility of uninterrupted, secure supply energy. However, they are also a subject of a great deal of political and economic power-play, which, in turn, potentially undermines or endangers their efficiency. This work intends to bring to light the current state of affairs regarding the energy supply transportation infrastructure between the EU member states and Russia. Part One presents an overview of the existing transport infrastructure, both overland and sea routes, between the EU and Russia. Part Two introduces the concept of *'Diversification'* and its divergent meanings for the producer and supplier states. Projected new routes and the rationale behind them, including their economic viability and political motivations, are presented in Part Three. Part Four attempts to make policy recommendations that could be useful in the attempt to improve the levels of trust between EU and Russia, or in other words, which could lead to an advancement of *'energy security'* between the regions. Conclusion offers a summary.

[1] 40-50 percent Russia's share in European gas imports is planned by the Russian Energy Strategy to 2020, 66 percent by 2030 is predicted by Stern J., The Future of Russian Gas and Gasprom (Oxford, UK: Oxford University Press, 2005), p. 143, Table 3.6, "European Dependence on Russian Gas Supplies, 2003." And 60 percent gas, overall 80 percent energy dependency on Russia is predicted by Euroactive, at http://www.euractiv/en/industry/geopolitics-eu-energy-supply/article-142665

2 Ganova Aglika and Ben Ayed Nizar, "European Union Energy Supply Policy: Diversified in Unity?" Institut Europeen des Hautes Etudes Internationales, May, 2007, p.71

3 Gazprom Export Company website, Export Dynamics, at: http://www.gazexport.ru/digits/?pkey1=00004

Part One

Oil is the primary source of energy for the EU. It accounted for 37.2 percent of EU's gross inland energy consumption in 2004.[4] Over 30 percent of total crude oil and oil products imports originate in Russia, which provides for over 25 percent of total EU oil consumption. The main importers of oil from Russia are Britain, France, Italy, Germany and Spain.[5]

Table 1. EU Oil Imports, 2006

Source	Percentage of Imports
Russia	33 %
Norway	19%
Saudi Arabia	11%
Libya	9%
Iran	6%
Kazakhstan	5%
Algeria	4%
Nigeria	3%
Iraq	2%
Other	8%

Source: European Commission

Oil pipelines

Currently the potential capacity of the Russian pipeline network allows for a supply of about 226 million tons of crude oil per year (or roughly 4.5 million barrels per day (bpd)) aimed at the Western European states outside the former Soviet Union. During 2006, Russia exported roughly 204 million tons of crude oil (4 million bbl/d), and over 2 million bbl/d of oil products.[6] 1.3 million bbl/d were exported via the Druzhba pipeline, another 1.3 million bbl/d were send via the port of Primorsk near St.Petersburg, and around 900,000 bbl/d via the tankers from the Black sea port of Novorossiisk. Exports of both oil and gas that occur through the use of pipelines fall under the sole authority of the state pipeline monopoly, Transneft. However, around 300 bbl/d of oil was transported by non-Transneft-controlled sea or rail routes. (See Table1)

Table 1

Russian Oil Exports by Export Outlet, 2006 (1000 bbl/d)	
Novorossiysk (after boats)	768
Other Black Sea (after boats)	217
Primorsk (after boats)	1,255
Druzhba Pipeline	
Germany	437
Poland	466
Hungary	136
Czech Republic	104
Slovakia	118
Total	**1,261**
Other Exports	
Non-Transneft Sea	170
China (Rail)	178
Murmansk (Rail)	47
Other Non-Transneft Rail	47
CPC	53

[4] European Union, "Energy & Transport in Figures 2006. Part 2: Energy", European Commission, Directorate-General for Energy and Transport, Brussels, 2006, p.13

[5] EurActiv Website, *"EU, Russia to Explore 'Reciprocity' in Energy Trade",* 17.10.2007, at: *http://www.euractiv.com/en/energy/eu-russia-explore-reciprocity-energy-trade/article-167662*

[6] EIA Website, Russia Oil Exports page, at: *http://www.eia.doe.gov/emeu/cabs/Russia/OilExports.html*

Total Crude Oil Exports	4,155

Source: Energy Intelligence, 18.1.2007

Figure 1. Primary Oil Pipeline Routes from Russia to EU

Source: EIA, 2007

"**Druzhba**" or "Friendship" pipeline is the world's longest oil pipeline of 4,000 km. With approximately 70 percent of overall Russian crude levels destined for Europe passing through this pipeline network, it is the largest principal artery for the transportation of Russian (as well as Central Asian) oil across Europe. Constructed in 1964 with an aim to supply oil to the socialist allies in the former Soviet bloc as well as to western Europe, its current capacity is 1.2 to 1.4 million bpd. The pipeline begings in Samara, southeastern Russia, where it collect oil from western Siberia, the Urals, and the Caspian Sea. It runs to Mozyr in southern Belarus, where it splits into a northern (Druzhba I) and a southern branch (Druzhba II). (Another section of the pipeline splits of on the territory of Russia, tresspasses Ukraine and comes to an end at the Black sea port of Odessa.) The northern branch crosses Belarus to reach Poland and Germany. Due to its overuse (it has been working for some time at full capacity) expansion works are currently underway to increase a section between Belarus and Polan. There have also been proposals to extend this branch to the German North Sea port of Wilhelmshave, which would reduce oil tanker traffic in the Baltic Sea and make it easier to transport Russian oil to the United States. The southern branch runs in the direction of Ukraine, Slovakia, Czech Republic and Germany.

Black Sea port of **Novorossiysk** is another export route for Russian and Central Asian oil. It is connected to the Russian Samara-Tihorek pipeline, which transports oil from Makhachkala and Baku (Azerbaijan). This route is also deemed attractive for Kazakhstan, especially after an expansion of an Atyrau (Kazakhstan)-Samara (Russia) pipeline. From here oil is transported to the Mediterranean and then to the European and Asian markets. However, the efficiency of this route is hindered by the limitations set for the passage of tankers though the Bosporus Strait.

The **Baltic Pipeline System (BPS)**, completed in December 2001, is a another major export link, that carries around 74 million tons of crude oil per year from Russia's West Siberian, Ural-Povoljye and Timan-Pechora regions westward to the newly completed port of Primorsk in the Russian Gulf of Finland. From there the supplies are shipped via tankers, to various markets, including the Nordic European states. Even though this route does not extend beyond the borders of Russia, it enables Russia to reach the western markets and has reduced dependence on the transit through Baltic countries[7], thus, lowering transportation costs by 3-4 dollars per ton, which together with services for transport cost saves Russia more than a billion dollars a year.[8]

Gas pipelines:

In terms of natural gas, the relationship between EU and Russia is even more pronounced. Two-thirds of the overall Russian gas exports, which amounted to 156.1 bcm in 2005, are destined for the European markets, with largest EU importers being Germany, Italy, France and Hungary.[9] However, in terms of consumption, Central and Eastern European countries are even more dependent on Russian energy imports. In this region Russian gas accounts for an average of 87 percent of total imports and 60 percent of consumption. (see Table 2). Due to a variety of factors such as rigorous EU regulations regarding the environment, with special emphasis on the replacement of high-carbon-emission fossil fuels such as coal, social resistance to nuclear power, and the steadily depleting intra-EU resources[10], the gas import figure is predicted to climb to a 60 percent mark by 2030, with most experts agreeing that natural gas would soon replace oil as the EU's dominant energy source.[11] Since Russia provides for the most readily available supplies, with other gas exporting countries such as Algeria lacking necessary quantities or transportation links, the importance of Russia's gas exports would continue to grow in the near to medium-term future.

Table 2

Major Recipients of Russian Natural Gas Exports, 2005			
Rank	**Country**	**Imports (bcm/year)**	**% of Domestic NG Consumption**
1	Ukraine	60.4	79
2	Germany	36.5	43
3	Italy	23.3	65
4	Belarus	20.2	100
5	France	22.6	26
6	Hungary	8.3	62
7	Czech Republic	7.1	?4
8	Austria	6.9	70
9	Poland	6.4	47
10	Slovakia	6.4	108*
11	Baltic States	5.7	100
12	Finland	4.2	105*
13	Romania	4.1	23
14	Fmr Yugoslavia	4	57
15	Azerbaijan	3.4	36
16	Bulgaria	2.8	89
17	Greece	2.4	96
18	Georgia	1.3	100
19	Switzerland	0.36	12

Source: IEA, BP (2006), CIS and E. Europe Energy Yearbook
* Percentages above 100 imply stocking of extra supplies.

[7] The growth of the BPS has come at considerable cost for the Baltic countries, as Russian crude which traditionally moved through the Baltic region has been re-routed through the BPS. Energy Profile of Russia, Encyclopedia of Earth, at: *http://www.eoearth.org/article/Energy_profile_of_Russia#Oil_Exports*

[8] Ibrahimov R., The Journal of the Turkish Weekly Opinion Website, 25.2.2007, at: *http://www.turkishweekly.net/comments.php?id=2498*

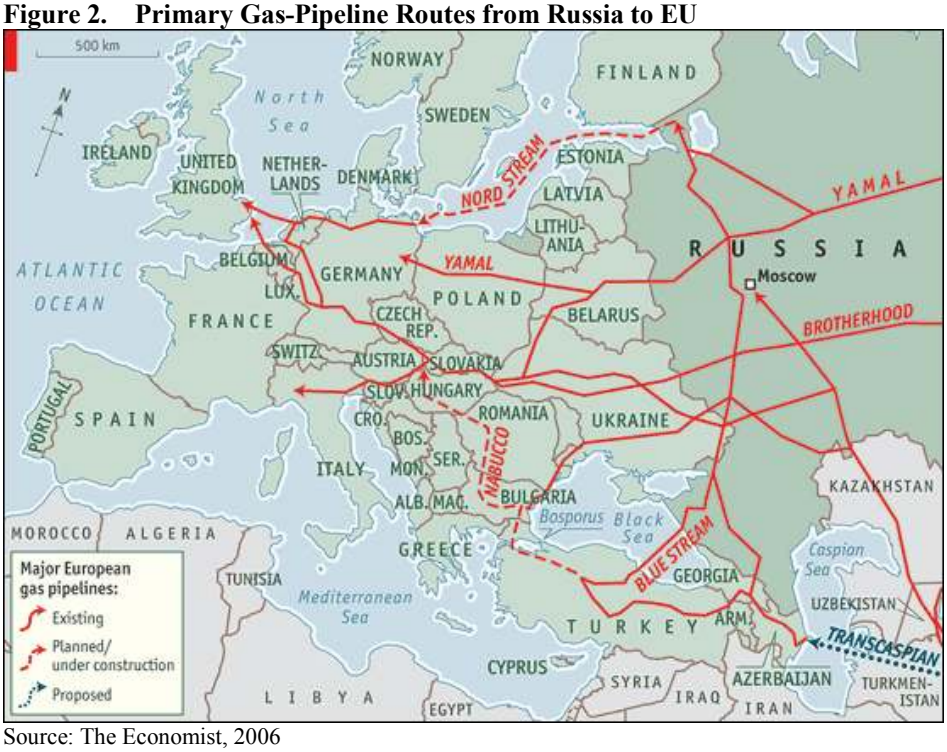
[9] Gazprom Gazprom Export Company website, Export Dynamics, at: *http://www.gazexport.ru/digits/?pkey1=00004*

[10] Intra-EU resources account for 50 percent of EU needs and originate in Britain, Denmark, the Netherlands, Italy, Romania, and Germany/

[11] Czernie W., "Structural Change in the European Gas Industry: Risk and Opportunities," World Energy website, 2.6.2006, at: *www.worldenergy.org/wec*

What follows is a brief summary of the current gas pipeline routes between Russian and EU.

Figure 2. Primary Gas-Pipeline Routes from Russia to EU



Source: The Economist, 2006

Yamal I (Yamal-Europe) pipeline is a 4,196 km pipeline which is runs through Belarus and Poland to Germany. It is Russia's only natural gas export route to Europe that does not cross Ukrainian territory. Even though only about 17 bcm of gas are currently exported each year through the Yamal-Europe gas pipeline, the pipelines maximum capacity is about 33 bcm. The objective of this route is to meet the market demand of Germany, and eventually of the Great Britain, since after planned connection with the 'Interconnector' pipeline[12] is completed, it will become the shortest route for Russian gas to the British Isles.[13]

Brotherhood, a 2,750-km long gas pipeline that connects Russia, Ukraine, Slovakia and Western Europe. Completed in 1967 it has an annual capacity of about 30 bcm. Natural gas exports through this pipeline represent about 25 percent of the natural gas consumed in Western Europe and about 70 percent of Russian gas exports to Western Europe.

Northern Lights (Urengoi-Uzhgorod) is a 4,500 km long pipeline, completed in 1983, with a capacity of 27.9bcm of gas per annum. It trespasses the territory of Ukraine, where it joins the path of Brotherhood pipeline and heads in the direction of Slovakia, Austria and Germany. It transports another third of the overall gas destined for Europe.

Blue Stream is a 1,250 km pipeline that connects Russia to Turkey. It runs from the Izobilnoye gas plant in southern Russia across the Black Sea bed (at record debths of 2,150 meters belowe the sea level) to the Turkish port of Samsun, and onwards to Ankara. Online since November 2005, the pipeline was built with an intention to diversify Russian gas deliveries to Turkey and at the same time avoding third countries, such as

[12] 'Interconnector' pipeline, completed in 1998, connects continental Europe to the British Isles. 20 bcm export and 25.5 bcm import capacity.

[13] Alexander's Gas & Oil Connections Website, Vol. 8, Issue 11, 3.6.2003, North Central Europe, at: *http://www.gasandoil.com/goc/news/nte32320.htm*

Ukraine, Belarus and Moldova. By 2010, Blue Stream is expected operate at full capacity, delivering 16 bcm of gas annually. By 2025 Russia plans to export 311 bcm of gas to Turkey via this route.[14]

Part II. Diversification

Europe

Throughout the last four decades, including the politically strenuous years of the Cold War, EU and Russia enjoyed very stable energy import-export relations. However, since recently Europe is becoming increasingly worried about the stability of oil and gas exports from Russia. As local production of energy is declining[15], and the Russian share of total EU bound energy imports is on the rise, Europe is growing concerned about over-reliance on one supply country for its energy import needs.[16] Moreover, the overall energy dependency of EU-27 would increase to 55% by 2010 and up to 64.9 % by 2030. However, if EU expands once again to include Switzerland, Turkey and Norway, EU-30 energy import would decrease to 44.4 percent in 2010 and 56.3 by 2030 due to domestic Norwegian energy production. (Table 3)

Table.3 European Import dependency, 1990-2030

	1990	2000	2010	2020	2030
EU-25	44.7	47.2	55.0	63.5	64.9
EU-27	44.6	46.7	54.4	62.9	64.2
EU-30	38.9	36.4	44.4	52.4	56.3

Source: PRIMES

The Russian-Ukrainian dispute during the winter months of 2006 has served as a catalyst for the expression of the buildup fears.[17] Additionally, the event produced a new degree of concern that Russia is becoming an unreliable supplier or is using its dominant position to promote its political aims.[18] Thus, as a reaction the national governments of EU member states and the EU Commission have begun to eagerly promote the need for energy diversification aiming to improve the overall energy security level within the EU borders.

Energy diversification is the main concept behind the aim for greater energy security of EU. It, in turn, could be separated into three main aspects; firstly, diversification of overall energy sources; secondly, diversification of suppliers; and third, diversification of transport routes.[19]

In terms of diversification of energy *sources* Europe is on the right path of finding a right fuel mix, with sustainability issue at the foreground. In 2004 oil and natural gas accounted respectively for 37.2 and 23.9 percent of EU's gross inland consumption, followed by solid fuels and nuclear power, 17.9 and 14.6 percent respectively. The share of renewables stood at 6.3 percent. By 2020 the EU aims to more than triple its share of renewable energy to 20% and to increase the level of biofuels in transport fuel to at least 10% by 2020.[20] Also, a debated issue of nuclear energy is reviving in some countries like the UK, and in others such as Finland and France it already enjoys strong support. Finally, Europe is aiming at improving its energy efficiency and developing low carbon technologies. These policies, apart from strengthening of the European energy security position, would also contribute to the EU's strategy for jobs and therefore growth.

[14] Gazprom Company Official Website, Europe Projects- Gasprom Export page, at: *http://www.gazexport.ru/?pkey1=000040000400001*

[15] By 2030, it is predicted that crude oil production should be at minus 73 percent of 2000 levels, and natural gas production at minus 59 percent of 2000 levels. Anglike,

[16] EIA Website, Russia Oil Exports page, at: *http://www.eia.doe.gov/emeu/cabs/Russia/OilExports.html*

[17] During the first few days of 2006, following Russian disagreement with Ukraine regarding export and transit energy prices, and a lack of signed contracts, Russia cut off supplies to Ukraine. Ukraine, in turn, was substituting it's loses by siphoning off European bound supplies which led to lower deliveries to Europe. European supplies were therefore temporarily affected.

[18] Cohen A., "*Backgrounder*", The Heritage Foundation, No, 1980, October 26, 2006, p.5at: *http://www.heritage.org/Research/Europe/bg1980.cfm#_ftn37*

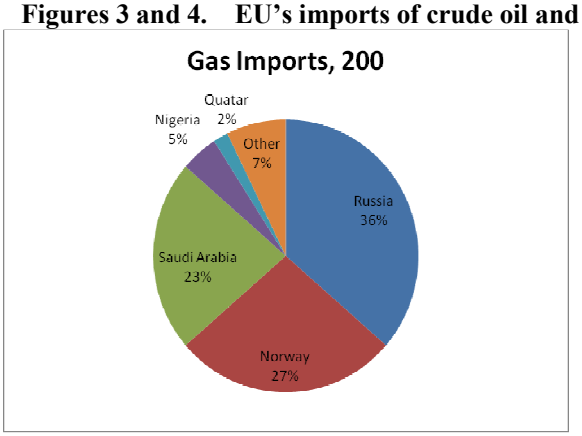
[19] Yergin, Daniel, "*Ensuring Energy Security*", in: Foreign Affairs, Vol.85, No.2, March/April, 2006, p.76

[20] The EU is already the global leader in renewable technologies. It has 60% of the world market share in wind energy. These technologies account for an annual turnover of €20 billion and employ 300 000 people in Europe.

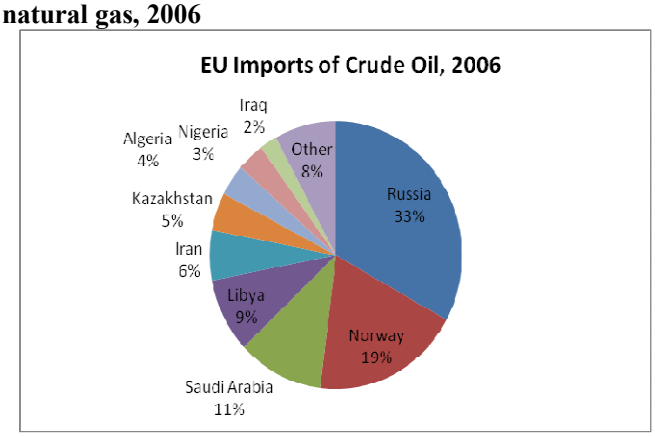
With regard to *suppliers*, EU receives its energy from a variety of sources; however, Russia was and will remain the predominant one.[21] (see Figures 3 and 4)

The supplier states that Europe is currently aiming to expand relations with African countries like Algeria, Libya, and Nigeria, and Azerbaijan, Kazakhstan and Turkmenistan in the Caspian Region. In North Africa there is a proposal for a 4,000 km Trans-Saharan Gas Pipeline, that would transport up to 30 bcm to the EU annually, scheduled for 2015. Also, EU is planning to invest in Libya (a country with extensive oil reserves of 39.1 billion barrels of oil, which represents 42 percent of all African reserves) and Algeria (with 4,551 Bcm natural gas reserves, which is already providing for about 20 percent of EUs natural gas demand, most of it via liquefied natural gas (LNG) routes). Thus, in order to intensify contact with such suppliers, some European countries, like Spain and Italy, are currently expanding their LNG port regasification infrastructure.

Figures 3 and 4. EU's imports of crude oil and natural gas, 2006



Source: EurActiv



Source: European Commission

With regards to Central Asia, getting direct access to the Caspian oil and gas is vital for European energy security in order to provide an alternative for reducing the dependence on Russian resources, due to the regions extensive resources and its geographically proximity to Europe. For example, Turkmenistan, being a major gas producer, holding 2,850 Bcm of proven natural gas reserves, and Azerbaijan, with 1,370 Bcm of proven natural gas.[22] (see Appendix for world oil and gas reserves) However, to a great extent the countries of this region are dependent on the existing Russian controlled infrastructure, both legally, as a remnant possession of the Soviet era, and geographically, since they trespass the territory of the Russian Federation, which makes direct cooperation with the EU difficult to say the least. Thus, significant investment in alternative pipeline infrastructure is necessary. However, if Europe is aiming to access the most resource abundant states of Kazakhstan and Turkmenistan directly, options in this respect are also quiet limited. Apart from the currently inconceivable option of building a pipeline though Iran, the only way to get Turkmen gas to Europe, and at the same time bypassing Russia, would be across the bottom of the Caspian Sea. However, the unresolved dispute over the ownership of the Caspian between Iran, Kazakhstan, Azerbaijan, Turkmenistan and Russia greatly undermines this option. (see Trans-Caspian and Pre-Caspian pipelines in the next section) Thus, 'The Caspian issue', if one may call this situation so, is a good example of how diversification of suppliers is directly linked to the diversification of transport routes.

However, there are a number of earlier projects that made possible a direct access to Azerbaijan. They include a 1999 "**Western Early Oil" pipeline** from Azerbaijan to the Georgian Black Sea port of Supsa. The limitations of this route, however, include the limited capacity of only 115,000 bpd and the fact that from Supsa oil has to be shipped via the Black Sea to the Mediterranean, via Bosporus, which is limited by the congestion limits. The solution of getting around the Bosporus is to route oil supplies to a location where tankers do not have to navigate this strait, for example the Black Sea port of Odessa, in Ukraine, which is now under consideration (see Odessa-Brody-Gdanks pipeline in the next section), or piped to the Mediterranean, the Persian Gulf or perhaps even across Europe to the North Sea or the Baltic Sea.

21 Van Oostvoorn F. (ed.), "*Long term Gas Supply Security in an Enlarged Europe*", ECN, Dec. 2003
22 However, Azerbaijan's resources lone are not enough to make a material difference to European energy security.

The Mediterranean option was also ready realized in the form of the **Baku-Tbilisi-Ceyhan (BTC)** oil pipeline. In relation to 'the Caspian issue', this project was a milestone. Opened in May 2005, the 1,768 km oil pipeline (world's second longest after Druzhba), with a capacity of 1 million bpd, directly connected the Azerbaijani capital to Turkey's east Mediterranean coast, from where oil is shipped to the European markets. It bypassed Russia completely, and, therefore, offered an alternative energy source to EU, eliminated the need for nearly 350 cargo tankers passing through the congested Bosphorus straight, and provided Turkey, Azerbaijan and Georgia greater geopolitical space to maneuver in terms of their external energy policies.[23] Consequently, it is considered as one of the most important legs of the East-West energy corridor.[24]

Also, a **South Caucasus Pipeline (SCP)** (sometimes called Shah-Deniz Pipeline, or Baku-Tbilisi-Erzum), is a natural gas Mediterranean option pipeline connecting Baku (Azerbaijan), Tbilisi (Georgia) and Erzurum (Turkey), from where oil is shipped to the European markets. This 692km pipeline, with the capacity of up to 16 bcm follows the same corridor as the BTC pipeline. From Erzum, the plans are to transport the supplies via the existing Turkey-Greece and the planned Nabucco, and Greece-Italy pipelines (see Section III).

However, hese pipelines only manage to reach the resources of Azerbaijan, which in comparison to Kazakhstan and Turkmenistan are quite limited, not even sufficient enough as to fill these pipelines to their capacities and to, thus, make the project economically viable.

Other pipeline diversification options, such as the Odessa-Brody-Gdansk oil pipeline, Nabucco gas pipeline or South European Gas Ring Project, all aim at increasing the share of Central Asian oil and gas in Europe, but are currently only at planning stages. (see Section III for details)

Another branch of a necessary diversification of transport routes for Europe is the expansion of energy entrance points between the member states, the so-called cross-links, which are important for mutual assistance in case of emergencies. This is especially important for the CEECs, who are now extremely dependent on Russian supplies, more so then their western neighbours, and therefore, need greater links with the Western and Southern member states as well as with each other.[25]

Finally, increasing imports of Liquefied Natural Gas, could also be considered as an alternative to the currently predominantly imported natural gas in gaseous form, since it transportation is realized though different means, mainly though shipping. The benefits of increasing LNG imports are the lower cost of transportation relative to pipeline costs. Europe is currently accounting for only approximately 8 percent of the total world LNG consumption (with Asia consuming 92 percent). In case of disruption of supply of mainstream energy sources, LNG could play a very important role in filling the gap, mainly because its supply does not require the crossing of countries which could undermine the process. Thus, Europe's regasification capacity of LNG will become an important aspect, with countries like Italy and Spain leading the way. Currently, Algeria is Europes main LNG supplier, with Libya and Egypt entering the market as well. According to the EIA predictions, by 2010 Europe will significantly develop its LNG import infrastructure, from 42 Bcm in 2000 to 65 Bcm in 2010.[26]

Russia:

For Russia, a producer state, energy security has a different meaning, which emphasizes security of demand, emphasizing greater access to *markets* and *consumers*.[27]

Currently, Russia produces almost 7 million bpd of liquids for export. However, only about 4 million bpd can be currently transported via major pipelines, the rest must be shipped by rail and sea routes.[28] These bottlenecks in the transportation system preclude the country from meeting its ambitions of exporting up to 6.2 million bpd by 2015.[29] Therefore, even if Russia intends to increase the export of oil through the Black Sea ports, extensive measures towards the development of new export pipeline infrastructure is necessary.

---

[23] Bilateral trade relations- including the 1995 customs union- as well as the EU's possible enlargement to Turkey form part of the wider geopolitical context of the BTC. [23]

[24] Hydrocarbons-Technology.com, "*Baku-Tbilisi-Ceyhan (BTC) oil pipeline*", at: *http://www.hydrocarbons-technology.com/projects/bp/*

[25] Ganova Aglika and Ben Ayed Nizar, "*European Union Energy Supply Policy: Diversified in Unity?"* Institut Europeen des Hautes Etudes Internationales, May, 2007, p.71

[26] EIA Website, Russia Natural Gas page, at: *http://www.eia.doe.gov/emeu/cabs/Russia/NaturalGas.html*

[27] Yergin, Daniel, "Ensuring Energy Security". In: Foreign Affairs, Vol.85, No.2, March/April, 2006, p.77

[28] Most of the 4 million bbl/d transported via alternative routes are petroleum by-products.

[29] Energy Profile of Russia, Encyclopedia of Earth, at: *http://www.eoearth.org/article/Energy_profile_of_Russia#Oil_Exports*

Such infrastructural projects currently underway or under discussion are plentiful. They include the enhancement and improvement of links with western EU member states, the Central Asian region, Eastern Balkan states, as well as with Asia and North America. Example of extension projects to EU include Druzhba-Adria-Integration Project, that would reverse the pipeline's flow, thus giving Russia a new export outlet on the Adriatic Sea and a extention of the Yamal-Europe gas pipeline, the Baltic Pipeline System Expansion. (see Section III for details)

With regard to Central Asia Russia already has a head start in this region. The current infrastructure of the region is a legacy of the Soviet era, when all of Central Asian oil and gas was exported via Russian territory. This inheritance has made Russia a dominant player in the regions external energy policy, as most current Central Asian energy export routes, with an exception of 'Western Early Oil', BTC and SCP pipelines, are still primarily controlled by Russia. Due to its own need for diversification Russia is has been jealously guarding and even expanding its control of the region in recent years. The construction, of a 1,510 km, **CPC oil pipeline** (Caspian Pipeline Consortium) from the Tengiz oil field in Kazakhstan to the Russian Black Sea port of Novorosiysk, in 2003, with a capacity of 35 million tons a year (700,000bbd) (from where oil is shipped to various markets) strengthened the Russian hold of the regions energy supply routes further.[30]

More recent developments include a 2007 purchasing agreement for all the Turkmen gas that the country can produce for the next 25 years, allegedly paying double the price for Turkmen gas as compared to market value. These extra quantities will be used to supply Russian own internal demand for gas, which is quickly rising, with the rest adding to the export supplies to Europe.[31] At the same time, the presidents of Russia, Turkmenistan, Kazakhstan and Uzbekistan, announced an agreement to refurbish the entire Soviet-built pipeline network that carries Central Asian gas to outside markets via Russia, which would be capable of carrying 90 Bcm of gas annually once completed.[32]

Other major development, that represent Russian strong hold of the Caspian region is the newly signed (September 2007) Pre-Caspian natural gas pipeline deal, that aims to transport Turkmen gas via Kazakhstan to Russia and then via Russian pipeline system onwards to Europe, with a capacity of up to 20 Bcm of gas by 2012, and up to 30 Bcm at a later date. This project was perceived a major blow to the European efforts of securing the Trans-Caspian gas pipeline proposal.[33] Furthermore, another Russian victory in the game of securing Central Asian energy supplies is the recently deal between Russia and Kazakhstan to expand the CPC oil pipeline to the capacity of nearly 1.3 million bpd (equivalent of 65 million tons a year) by 2010.[34]

Apart from increasing its export capacity, Russia is also aiming to cut its dependence on the so-called middlemen, or the transit countries of Ukraine and Belarus. Currently, 90% of overall Russian gas to Europe flow through Ukraine.[35] These transit flows, during the last couple of years have been under threat of Ukrainian 'high jacking,' exemplified by illegal siphoning-off , transit-fee regulation instability, and general quasi-violent political insecurity in the country. The 2006 Russia-Ukraine and the 2007 Russia-Belarus stalemates, which arose due to disagreements in energy transit fees across the country, resulted in temporary supply decreases to Western Europe, and have prompted a number of pipeline projects that would diminish Russian dependence on ex-Soviet transit countries, including the Baltic states. Some of these projects include the Nordstream gas pipeline across the Baltic Sea; Burgas-Alexandroupolis gas pipeline, connecting Bulgaria to Greece; the extention of Blue Stream; and a South Stream gas pipeline. All these projects aim primarily at increasing the level of supplies to Europe directly by eliminating Russian reliance on transit states. This strategy should, as a result, reduce Gazprom's dependence on those countries, eliminate transit fees, and, thus, offer Europe lower energy costs and protection from a possibility of an unpredictable supply disruptions arising due to problematic relationship with producer and transit states.[36]

---

[30] Caspian Pipeline Consortium, official website, at: *http://www.cpc.ru/*

[31] The Economist, European energy security, *"A Bear at the Throat",* 12,4,2007, p.6

[32] Alexander Vershinin Associated Press, "*Russia strikes natural gas pipeline deal*", April 15, 2007, at: *http://www.usatoday.com/money/economy/2007-05-12-2585352601_x.htm*

[33] Ibid.

[34] Caspian Pipeline Consortium, official website, at: *http://www.cpc.ru/*

[35] -Gazprom Company Official Website, Europe Projects- Gasprom Export page, at: *http://www.gazexport.ru/?pkey1=000040000400001*

[36] Agence France-Press, "*German, Russian Official Launch Work on Controversial Baltic Pipeline,"* 9.12.2005.

With regard to the diversification of *markets* Russia is currently looking to expand its presence in Asian, the Pacific and the US. In Europe these plans are perceived with a concern, due to fears that this might disrupt the security of European imports. However, numbers say otherwise. According to projections, by 2030, while China and India (the biggest growing Asia importers of gas) together would only import some 80 Bcm of natural gas per year, OECD Europe would import a total of almost 500 Bcm per year. In terms of oil China and India will consume around 18,0 million bpd in 2030, while Europe will require 14.9 million bpd to meet its consumption needs.[37] Thus, the demand for gas in Asian countries will remain rather small in contrast to Europe and clearly shows that Europe would remain a very important energy import market for supplier states. Thus, it would not make much economic sense for Russia to reorient a significant part of its gas exports to Asia/China in expense of losing out on in the major European market.[38] In terms of oil, it would make sense for Russia to cater to the Asian needs, with plans already in progress. However, this should not undermine European energy security, as Russia and many EU member states have already established long-term (in most cases 25 year long) oil supply contracts, which are extremely valuable for both sides, and, therefore, not prone to violation.

Finally, within Europe, Russia is expanding its presence in the UK, Belgium, Netherlands and Scandinavia. In 2006, Gazprom sold the first shipments of 140,000 cubic meters of LNG in the UK; bought a 10 percent share of the West European natural gas pipeline 'Interconnector'; acquired, through a subsidiary, a gas retail business, Pennine Natural Gas Limited, in the UK[39]; signed a preliminary contract with Belgium for gas supplies and a construction of the underground gas storage facility; and arranged for a distribution access to European customers through France's Gaz de France and Italy's ENI.[40] Similar contracts were signed in 2006 and 2007 with Austria, Czech Republic and Bulgaria.[41]

This constitutes a new step in the direction of diversification of markets, since it actually involves an expansion into the European supply lines with an aim to get direct access to the local distribution channels, thus making further profits from sales along the entire supply chain, from production to consumption.[42]

However, this strategy is at clear conflicts with the interest of EU. European leadership is concerned that the entry of the Russian gas monopoly, Gazprom, into local markets would undermine local control of vital assets, and further intensify the overall dependence on one supply source. In order to halt this expansion, the European Parliament has amended the 'Gas Directive' to include provisions for 'Unbundling' and 'Third country aspects', (sometimes referred to as the 'Gazprom clause') which requires effective unbundling of transmission system operators, supply and production activities not only at national level but throughout the EU. This means that no supply or production company active anywhere in the EU can own or operate a transmission system in any member state of the EU.[43] This legislation is a direct attempt to avert Russian penetration into the European energy market. However (thought subsidiaries and other legal forms) Gazprom plans to further step up its strategy to supply natural gas to end consumers in Europe this year. According to Deputy CEO of Gazprom, Alexander Medvedev, as part of the European Union's market liberalization requirements, major European companies are obligated to hand over a portion of their existing export contracts to other companies. However, even though this new strategy is a way for Russia to gain greater benefits from its resources, it is also very precarious and might further diplomatic tensions with the EU if followed too quickly, dominantly or at all.

The next section lists the planned EU and Russia backed oil- and gas-pipeline projects.

---

[37] European Union, "*Energy Security and Transatlantic Cooperation*", October, 2006, at: *http://www.eurunion.org/news/eunewsletters/EUInsight/2006/EUInsightEnergyOct2006.pdf*

[38] Harks E., "*The Conundrum of Energy Security, Gas in Eastern and Western* Europe", The International Spectator, 3/2006, p.49

[39] Russian News Wire, Gazprom Marketing & Trading Ltd. Sets up Subsidiaries in US and France, at: *http://www.russianewswire.com/releases_headlines_details.php?id=3513*

[40] The RZD-Partner, *"Gazprom to Boost Direct Sales in EU",* 20.11.2007, at: *http://www.rzd-partner.com/news/2007/11/20/315126.html*

[41] Gazprom Company Official Website, Europe Projects- Gasprom Export page, at: *http://www.gazexport.ru/?pkey1=000040000400001*

[42] Müller Friedemann, *"Europe Must Diversify Its Energy Sources",* Stifftung Wissenschaft und Politik Berlin, SWP, 2003, at: *http://en.internationalepolitik.de/archiv/2003/summer2003/europe-must-diversify-its-energy-sources.html*

[43] Directive of the European Parliament and of the Council, Amending Directive 2003/55/EC of the European Parliament and of the Council of 26, June 2003 concerning common rules for the internal market in natural gas, p.8at: *http://ec.europa.eu/energy/electricity/package_2007/doc/2007_09_19_explanatory_memorandum_en.pdf*

Part III: Projected oil and gas pipeline routes

EU supported oil pipelines:

Odessa-Brodi-Plozk-Gdansk extension project: On October 10, 2007 Azerbaijan, Georgia, Ukraine, Poland and Lithuania have agreed on building a 490-kilometer extension of an existing pipeline from Brody in western Ukraine northward to the Polish port of Gdansk on the Baltic Sea, with Azerbaijan providing for the necessary supplies of 280,000 barrels per day (14 million tons annually).The first leg of the pipeline, from Odessa to Brody, was already completed in 2004 with the aim of delivering Caspian oil to central Europe. However, since then the project has languished, with Russia using it to export oil via the Black Sea.[44] The estimated €500 million pipeline would provide Lithuania and Latvia with direct crude, after Russia stopped its deliveries to Mazeikiu Nafta, the only refinery in the Baltics, since July 2006, citing a pipeline accident.[45] However, the main problem with the project is the state of supplies, since it is unclear whether Azerbaijan could commit enough crude as to make the project economically viable.[46]

Russian supported oil pipelines:

Druzhba-Adria-Integration Project: The projected aim of reversing the flows of the Adria pipeline and tying it to the southern Druzhba route, which would allow oil exports from the Caspian to run via Russia's pipeline system (crossing Ukraine and Hungary), and terminate at the Croatian Adriatic port of Omisalj.[47] The proposal also includes the expansion of the the pipeline's capacity from 100,000 bpd to 300,000 bpd at a total cost of around $320 million. To launch the project cooperation of six countries (Russia, Belarus, Ukraine, Slovakia, Hungary and Croatia) is required. In December 2002, these countries signed a preliminary agreement on the project. Since then, however, progress has been slow, as the transit states dispute the project's details (including tariffs and environmental issues). Of the six partners, only three countries, Slovakia, Hungary, and Ukraine, are ready to implement the reversal. Croatia being particularly worried about the environmental effects of increased oil transports from a port along its coast, has rejected the conclusions of a 2005 environmental impact study, thereby halting further developments. However, following the January 2007 Belarus-Russia oil dispute, Hungary stated that it could technically reverse its portion of the pipeline within 20 to 30 days.[48]

Baltic Pipeline System Expansion (BPS-2). On May 21, 2007 the Russian government approved a plan to extend the BPS to the ports of Murmansk and Indig. This plan would further divert oil from the Druzhba pipeline. Initial capacity of the pipeline would be 1 million barrels per day (bpd), thus, expanding total Primorsk's export capacity to around 3 million bpd, with the majority destined by for the Nordic as well as North American markets (with transportation time of 9 days less than those of Middle Eastern and African alternatives).[49] The cost of the project should reach $3,7 billion. The aim behind the project is to further reduce

[44] Global Research, "*East European Nations Sign Black Sea-Baltic Sea Oil Pipeline Deal*", October 14, 2007, at: *http://www.globalresearch.ca/index.php?context=va&aid=7068*

[45] The refinery's owner, Poland's PKN Orlen, the largest fuel retailer in Eastern Europe, has been forced to supply the refinery via oil via tanker, which is considerably more expensive than deliveries by pipeline.

[46] Negnum Information Agency, "Будущее Европы за нефтепроводы в Европу", 10.10.2007, at: *www.regnum.ru/news/897351.html*

[47] Energy Information Administration , Caspain Energy, Caspian Sea Region, at: *http://www.caspianenergy.com/s/caspianenergy1*

[48] EIA Website, Russia Oil Exports page, at: *http://www.eia.doe.gov/emeu/cabs/Russia/OilExports.html*

[49] Ibrahimov R., The Journal of the Turkish Weekly Opinion Website, 25.2.2007, at: *http://www.turkishweekly.net/comments.php?id=2498*

dependence on the transit through Baltic states and Belarus. Approved following tensions between Russia and Belarus and worsening relations with the EU, the project is currently under feasibility stage but could be completed in as few as 18 months.[50]

Gas-Pipelines:
EU supported gas pipelines:

Trans-Caspian Gas Pipeline (Turkmenbashi-Baku) is an under Caspian gas pipeline, with initial carrying capacity of 6.25Bcm, expandable to 30.6 Bcm. It aims at connecting Kazakhstan to the already present BTC pipeline in Azerbaijan (thus adding additional volumes and justifying BTC economically). Further plans include onward flow of Caspian gas along the planned Nabucco pipeline. Currently at pre-feasibility stage, the pipeline could carry gas from eastern Turkmenistan, and could eventually include exports from Uzbekistan and Kazakhstan. The estimated cost of the project are around $5 billion. However, due to the unresolved status of the Caspian and the opposition to any offshore pipeline by Russia and Iran, together with environmental concerns, the pipeline is not very realistic. Moreover, the current reserves at Tengiz are already exported through the CPC pipeline to Novorossiysk. To make the pipeline feasible, additional reserves must be found.[51] Finally, the plan suffered a major blow in May 2007 when Kazakhstan, Turkmenistan and Russia agreed on the realization of the Pre-Caspian Gas pipeline.[52] However, the plan is not considered to be completely obsolete as the current Turkmen President, Gurbanguly Berdimuhammedov, stated that Turkmenistan does not rule out future consideration of this project.[53]

Nabucco is a planned 3,300km natural gas pipeline project through which it is intended to bring up to 31 Bcm annually of Central Asian gas from the eastern end of Turkey, across Romania, Bulgaria, and Hungary into Austria by 2020 Construction is expected to begin in 2008 and finished in 2011-13. It aims at bypassing Russia and would transport BTC gas to Central Europe. For these reasons this pipeline has a substantial geo-political significance, and is strongly supported by the EU. However, it has encountered financial problems and lack of political will in some member states, with particular reference to Hungary[54], which in March 2007 announced that it had agreed to a Russian proposed extension of the Blue Stream pipeline project instead.[55] (see below)

The Galsi Pipeline: This project, currently at feasibility study stage, envisions a creation of a 900 km natural gas pipeline between Algeria and Italy (via Sardinia). The projected capacity of the pipeline would be 9-10 Bcm/year, 2 Bcm of which would meet Sardinian needs only, with the rest destined for the Italian and European markets.[56]

Southern Europe Gas Ring Project: is a two step project which the European Union included among the top five priority developments in the trans-European energy system. It aims at connecting the

---

[50] BBJ Hungarian Daily News, May 21, 2007, at: htt*p://www.bbj.hu/news/news_26659.html*
[51] Trans-Caspian Oil, Princeton University, *http://www.wws.princeton.edu/wws401c/1998*
[52] **Central-Asia-Centre** gas pipeline: with the current capacity of 44Bcm per year, expandable to 90, it runs from Turkmenistan via Uzbekistan and Kazakhstan to Russia. Build in 1974, it has two branches, with the western branch running from the Turmen Caspian region to the north, and the eastern from east Turkmenistan and south Uzbekistan northwest. Both branches meet in western Kazakhstan. From there the pipeline continues north where it connects to the Russian natural gas pipeline system. It transport most of Uzbek and Turkmen natural gas. In May 2007, Russia, Kazakhstan and Turkmenistan signed an agreement for the renovation and expansion of the western branch of the pipeline. ('Putin deal torpedoes Trans-Caspian gas pipeline plans', New Europe, The European Weekly, 17.05.2007, *http://www.neurope.eu/view_news.php?id=73862*)
[53] Dmitry Butrin, Kommersant Daily Newspaper, May 14, 2007, at:
http://www.kommersant.com/p764997/r_529/oil_gas_pipelines_Russia_Central_Asia/
[54] Meanwhile, the Hungarians might become net exporter of gas within five years, as Falcon Oil & Gas, a Canadian-owned company, announced in the beginning of 2007 that a large gas field located near the southern Hungarian town of Mako could hold up to 617 Bcm of natural gas. If successful, the Mako field could meet Hungary's gas needs for decades, and perhaps even supply other Central and Western European countries.
[55] Kupchinsky, Roman, Radio Free Europe/Radio Liberty, "*EU's gas pipeline plan threatened by Hungary*", 26.03.2007
[56] Edison company official website, New Projects, IGI, at: *http://www.edison.it/edison/site/en/activities/gas/new-projects/*

natural gas pipeline networks between Turkey, Greece and Italy through first, a Turkey-Greece pipeline and then a Greece-Italy pipeline.[57] The first part of the project, **the Turkey-Greece**, a 296 km natural gas pipeline that begins in Karatchabep in Turkey and runs to Komotini in Greece, was already completed in September 2007. Its current capacity of 7 Bcm could be expanded to 11.5 Bcm by 2012, of which 8 Bcm will be delivered to Italy.[58] **Italy –Greece gas pipeline (IGI)**, is a 800 km undersea pipeline, that would allow Italy to diversify its gas sources and thus provide for extra regional energy security as well as increase the competitiveness of the energy market. Its construction would cost nearly $1 billion, with the works planned to commence in 2008, to be completed by 2011.[59]

Russia supported gas pipelines:

Burgas-Alexandropoulis is a 279 km gas pipeline that will run from Bulgaria's Black Sea port of Burgas to Alexandroupolis in northern Greece, thus bypassing the Bosporus. Symbolically, it will be the first Russian-controlled pipeline on EU territory, carrying Russian and Central Asian oil straight to the EU.[60] Proposed 1994, it was shelved until recently due to low gas prices. Now that the prices have risen it has gained in economic rationale and agreed upon in May 2007. Its capacity would reach up to 31 Bcm by the time the phase two of the project is completed. In order to fill the pipeline to its full capacity Kazakhstan also agreed to participate in providing for necessary supplies.[61]

Pre-Caspian Gas pipeline: This pipeline will transport Turkmen and Kazakh oil along the eastern Caspian Sea coast into Russia for local distribution channels, in order to meet local Russian demand, with the rest supplementing the supplies towards the European markets. Annual capacity of the pipeline may reach 20 Bcm of gas by 2012, expandable to 30 Bcm. 2003 cost estimate of the pipeline was around $1 billion. Singing of this deal in May 2007 made it clear that Russia would continue to control the bulk of Central Asian energy exports.[62]

Yamal-Europe-2: An extension project of the existing Yamal-Europe pipeline, currently under discussion. If realized, the combined annual capacity of the two pipelines would reach nearly 70 Bcm/year, with costs reaching being up to $10 billion.[63] This project is particularly supported by Belarus, since the pipeline would be crossing its territory. However, for exactly the same reason the project is deemed less advantageous for Russia. Other factors that negatively affect the project are: a disagreement between Gazprom and Poland on the exact routing of the second branch as it travels through Poland. Gazprom aims for a route via southeastern Poland to Slovakia and on to Central Europe, while Poland wants it to pass through its own territory and then onwards to Germany. Also, Gazprom has failed to agree with Poland on the increase of its equity stake to 50 percent in EuroPolGas (the polish operator for the polish part of the pipeline) which limits Russian ability to manage/service the pipeline in the long-term. Moreover, due to tensions with Belarus Gazprom failed to establish control over Beltransgaz (the Belarusian operator of the Belarusian part of the pipeline). Due to these multiple reasons it appears that the project is about to be shelved, with Russia preferring to invest in an alternative Nordstream pipeline via the Baltic Sea.[64] (see below)

---

[57] Biresselioğlu Mehmet Efe, "*South European Gas Ring Project: The role of Turkey and Greece",* RIEAS, Research Institute for Europe and American Studies, Greece, at: *http://rieas.gr/index.php?option=com_content&task=view&id=236&Itemid=67*

[58] Alexander's Gas & Oil Connections Website, Vol. 8, Issue 11, 3.6.2003, North Central Europe, at: *http://www.gasandoil.com/goc/news/nte32320.htm*

[59] Edison company official website, New Projects, IGI, http://www.edison.it/edison/site/en/activities/gas/new-projects/

[60] The Economist, European energy security, "*A Bear at the Throat*", 12.4.2007

[61] Vershinin Alexander, *"Russia strikes natural gas pipeline deal*", Associated Press, April 15, 2007 *http://www.usatoday.com/money/economy/2007-05-12-2585352601_x.htm*

[62] Ibid

[63] EIA Website, Russia Natural Gas page, at: *http://www.eia.doe.gov/emeu/cabs/Russia/NaturalGas.html*

[64] Milov,Vladimir., "*Russian gas sector developments and new European projects*", Institute of Energy Policy Website [News and Comments], September 2005, at: *http://www.energypolicy.ru/files/Presentation-Milov-Sept.20-2005.ppt*

Extention of Blue Stream (Blue Stream 2): is a planned two-branch extention of the Black Sea pipeline line towards Bulgaria, Serbia, Croatia and western Hungary one way, and towards Israel and Lebonon through the other. Even though the existing Blue Stream pipeline is underused, currently transporting only about 4.7 Bcm/year out of the 16 Bcm full capacity, the extention could raise the pipelines transportation capacity to around 30 Bcm of natural gas per year.[65] Some analysts say that this extention could open the way to a Samsun-Ceyhan link which could as a result connect Blue Stram to the BTC. Blue Stream-2 directly competes with Europe's Nabucco gas-pipeline plan, and, therefore, is received with an EU-wide concern, Hungary being an exception.[66]

South Stream pipeline: A natural gas pipeline that, by crossing the Black Sea, would connect Russia directly to Bulgaria. It could deliver 30Bcm/year of natural gas via Bulgaria to Austria, Slovenia and Italy. Announced by Gazprom in June 2007, this project could replace previous plans to extend the Blue Stream pipeline.[67]

Nordstream pipeline (previously North European Gas Pipeline/NEGP), would extend over 1,200 km from Vybord, Russia, on the Gulf of Finland, via the Baltic Sea to Greifswald in northeast Germany. With predicted annual capacity of 26.5 Bcm of gas, the pipeline, would cost around $5.7 billion, and should be completed by 2010. The pipeline would provide Russia with a direct access to Germany, and from there on to the British Isles as well as the Netherlands. A possible spur connection to Sweden has also been considered. Moreover, the pipeline could transport gas to former transit countries: the Baltics, Poland, and other states of Eastern Europe (thus, making Germany the primary distributor of Russian gas in Europe).[68] A second pipeline, if deemed necessary, could double the transmission capacity to 52 Bcm by 2013.[69] The main source of supply for the pipeline will be the Russian Uzhnorusskoye gas field in the Yamal-Nenets Autonomous District. While this field alone cannot supply the entire pipeline, by the time the second branch will be completed, it will be possible to bring in gas supplies from the Yamal, Obsko-Tazovskya Bay, and Shtokman gas fields, the latter of which is estimated to contain 3.7 trillion cubic meters of natural gas.[70]

The benefits of the pipeline include the avoidance of transit countries of Ukraine and Belarus. This should, in turn, reassure the EU that the Russian relationship with the former Soviet transit states would no longer disturb Europe's gas supplies. Moreover, it would slash transit fees, thus bringing the overall price for EU bound gas down. Consequently, Russia would also gain a better position for negotiations on transit fees for its other transit routes.[71]

The negative aspects of the project include fears concerning the ecological impact on the especially fragile Baltic Sea basin. Also, there were fears that the project might disrupt some of the weapons remaining on the Baltic seabed following WWII; however, as to avoid this problem, the pipeline was recently rerouted, making it 8 km longer.[72]

---

[65] Ibid
[66] The Economist, European energy security, "*A Bear at the Throat*", 12,4,2007, p.3
[67] The RZD-Partner, *"Gazprom to Boost Direct Sales in EU",* 20.11.2007, at: *http://www.rzd-partner.com/news/2007/11/20/315126.html*
[68] Energy Industry Today, Russian Natural Gas Pipeline News, at: *http://energy.einnews.com/news/russia-natural-gas-pipelines*
[69] Agence France-Press, "*German, Russian Official Launch Work on Controversial Baltic Pipeline,"* 9.12.2005
[70] Cohen A., "*Backgrounder*", The Heritage Foundation, No, 1980, October 26, 2006, at: *http://www.heritage.org/Research/Europe/bg1980.cfm#_ftn37*, p.5
[71] Ibid
[72] Energy Industry Today, Russian Natural Gas Pipeline News, at: *http://energy.einnews.com/news/russia-natural-gas-pipelines*

Part IV: Policy Recommendations

It is clear that both EU and Russia are pursuing active energy diversification strategies. EU is occupied with diversifying its suppliers, and therefore transportation routes, as well as the overall energy mix in order to provide lasting energy security for the region. On the other hand, Russia is attempting to increase the energy export levels to its established markets, diminish dependency on post Soviet transit states, and is looking to expand into new markets. It appears that this state of affairs could be balanced or even beneficial for both regions, however, their common interests for Central Asian resources, the unstable relations with transit states, and the Russian endeavours of entering the local European energy distribution networks are creating tensions. More importantly though is a fact that Europe is becoming overly dependent on Russia in the overall share of its energy supply needs. These interlinked aspects of EU and Russian energy policies are central to the determination of their interdependent future supplier-customer relationship.

The EU's strategy towards Russia is actually based on the fact that EU's energy policy is essentially rooted in a position of weakness and concern. EU is overly dependent on energy imports, with Russia currently being its' main energy supplier, which is now, due to higher energy prices and improved technological know-how, is able to expand its supplies and presence in Europe considerably and, as illustrated by the 2006 successes of entering the EU market, also rather quickly. Thus, current strategy of pressuring Russia, as exemplified by recurrent criticism, just might, be EUs attempt to destabilise the earlier suitable or constructive relations between the two regions, in order to place Russia in a more insecure or dubious position regarding its plans for expansion or diversification towards the West, making each step more difficult and protracted. In the meantime, this strategy just might provide the region with enough time for diversifying towards other regions, with Central Asia being on the top of the agenda, since North African LNG expansion strategy is currently constrained by the fact the process of liquefying gas is still expensive, and most natural gas exporters and importers have yet to develop the infrastructure necessary to make LNG shipments cost-effective.

The EU interest for Central Asia is, in turn, shared by Russia. While EU requires diversification of its supplies, Russia needs greater supplies to meet the growing demand of its export markets, as well as domestic energy consumption needs. However, since the September 2007 deal between Kazakhstan, Turkmenistan and Russia, EUs plans for Central Asia have suffered a major setback, with Russia most likely (if signed agreements are adhered to) to exercise greater control of the regions energy resources. The already established EU supported BTC and SCP pipelines are limited in their ability to provide for required oil and gas needs due to lower availability of supplies in Azerbaijan, as compared to Kazakhstan and Turkmenistan. The Trans-Caspian Pipeline, which could have provided for the necessary quantities, and even made the BTC pipeline economically viable, is now under question, thus, limiting the overall EU options in the region. Moreover, this development undermines the viability of the planned Nabucco pipeline, as it might have insufficient gas supplies in order for its construction to be economically sensible. Consequently, if the project is halted, the EU would have no choice but to cooperate more intensely with Russia, thus strengthening the relation of inter-dependence between the two regions. Thus, in the interests of the EU, it is beneficial to step up its persuasion techniques regarding the Trans-Caspian pipeline with the Central Asian governments of Turkmenistan and Kazakhstan. However, this is made difficult to by fact that due to extensive previous experience and connections in the region Russia has a competitive advantage vis-a-vis their Western competitors. Otherwise, the only alternative to the Trans-Caspian route for direct supplies of the Caspian energy to EU is to construct a pipeline through Iran, which is currently improbable due to US strategy of economic embargo towards the country. In order to make this option more viable, major shifts need to occur in Western relations with Iran, or vice versa.[73]

[73] FIlis, p.3

Another issue that is undermining cooperation between EU and Russia is the role and status of the transit states, such as Ukraine and Belarus. Currently, roughly 80 percent of Russia's natural gas exports towards Western Europe are transported over the territories of the Ukraine[74], with another 20 percent though Belarus.[75] Thus, both EU and Russia have to work in greater cooperation as to manage the issue of transit and to preclude future disruptions of energy supplies. The current Russian attempts to build the Nordstream pipeline, that will diminish the influence of transit states, by bypassing Central and Eastern Europe and linking Western Europe directly to Russia, is a one sided policy.[76] It is essential for EU to step up its policy towards those states as well. The EU efforts of compelling Russia to sign the Energy Charter, of 1994, which addresses investment and transit of energy, has neither been signed in full by the Ukraine or Belarus (with particular reference to the issue relating to transit). If signed, other signatories of the Charter would be allowed to directly access the excess pipeline capacity of these countries, which could lead to better management of these pipeline routes. Thus, it would be beneficial to the overall issue of EU energy security if EU would to put more pressure on negotiation with the transit states for full ratification of the treaty, instead of merely stressing Russian unwillingness to do so.

With regard to Russian position towards the Energy Charter, the situation differs somewhat. Access to Russia's network of pipelines and compressor stations has become a crucial element in the worsening relations between the EU and Russia. It is argued that the ratification of the Energy Charter by Russia would effectively break up Russia's monopoly on gas pipelines to Europe, allow access to Russia's energy deposits, and force Russia to price its own gas more competitively in relation to other suppliers. However, if viewed from the point of view of Russia, these provisions are rather biased towards EU, since energy resources, and their transportation, are the main source of budget income for the country, which if remained centrally controlled, at least for the time being, might offer a practical solution to the overall economic development of the country. Therefore, losing control of these national treasures is simply not an option for the country at this point in time. As a result, President Putin has stated that Russia would not ratify the Charter in its current form, stressing that the EU nations pushing for access to Russia's energy deposits and long-distance gas pipelines must offer assets comparable in value. Moreover, by keeping control of pipeline transportation network, Russia is able to make quicker decisions regarding the extension of the routes, which is partially in the interests of EU (by providing extra supplies to meet EU demands). Furthermore, it is in best interest of Russia to keep a steady flow of supplies towards the EU, not only due to present economic gains, but also in order to gain future supply contracts with the EU members states, and in this manner finance its pipeline diversification projects. Moreover, it is probably easier for the European member states to have a one-stop negotiating partner in the form of the Russian government as opposed to various companies and government agencies, which would the case if multiple actors would be allowed on scene. Therefore, Russia proposes an elimination of some friction points within the existing Energy Charter framework, preferring the format of the existing Energy Community Treaty[77], currently applicable to South Eastern Europe only.[78]

Consequently, the rumoured plans of Russia for a creation of a single state controlled oil and gas company, through a merger of Transneft with Transnefteprodukt (the state-owned oil-products pipeline company), and SG-Trans (the state-owned LNG transport company), along with the Caspian Pipeline Consortium (a private pipeline that transports oil from Kazakhstan to the Black Sea) probably follows the above-stated rationale, which could prove harmless, or even beneficial in regard to EUs energy supply needs.

Finally, the recent speculation that Russia is planning to create a "gas OPEC," which would include Iran and Turkmenistan, are yet to be officially validated. If realized, such a gas cartel would control the world's first, second, and fourth largest gas reserves, which hold approximately 73 percent of total natural gas reserves, and would have significant influence over the price of natural gas.[79] However, Russian current strategy of increasing gas supply routes and bypassing transit countries has a contradictory effect, which actually optimizes gas transit costs to Western Europe.

---

[74] Theodore George Tsakiris, "The Eurasia Energy Complex," *Defense & Foreign Affairs Strategic Policy*, 2.2006.
[75] German Economic Team in Belarus, "Belarus as a Gas Transit Country," Research Centre for the institute of Privatization and Management, at *www.ipm.by/pdf/pp304e.pdf*
[76] Cohen A., Backgrounder, The Heritage Foundation, No, 1980, October 26, 2006, p.4
[77] Energy Community for South Eastern Europe Official Website: *http://www.energy-community.org/portal/page?_pageid=34,64967&_dad=portal&_schema=PORTAL*
[78] Milov Vladimir, Institute of Energy Policy, Russia, Hearings at the Foreign Affairs Committee of the European Parliament, Brussels, February 28th, 2007, *http://www.energypolicy.ru/files/Milov-Feb28-2007.ppt*
[79] Cohen Ariel, *http://www.heritage.org/Research/Europe/bg1980.cfm#_ftn37*

Another point of friction between EU and Russia are the Russian attempts of gaining access to European end-consumers through direct control or contracts with local energy providers. From Russian perspective, this policy aims at maximizing export revenues, and is in accord with the intra-EU policy of liberalization of its energy networks.[80] This policy may actually positively contribute to the predictability of the energy supply from Russia.[81] However, from the perspective of EU, Russian policy is an infringement into the regional energy grid, which could be detrimental to the overall energy security if further tensions occur between the regions. Since Russian policy of accessing European consumers is done through bilateral negotiations between Russia and local energy companies, EU is now pushing forward a supranational attempt in order to limit third-country access to local providers and transportation networks. It could be argued that this policy is somewhat at odds with the general principle of liberalization of local energy networks. However, since it is also an issue of security, the EU should perhaps aim at limiting as opposed to banning foreign participation in local markets.

Overall, there is a greater miscorrelation between the general economic policies between the regions, with EU favouring liberalization of its own and foreign markets, and Russia preferring monopoly of domestic resources, while following the principles of liberalization abroad. However, these differences should not necessarily be counterproductive, if in the end they offer secure and increased energy supplies on one hand and financial rewards on the other. For example, Nabucco and Blue Stream pipelines need not be counterproductive, if they manage to provide alternative Caspian supplies to Europe, thus offering greater security and more competitive prices.

Additionally, the EU energy policy would perhaps be smoother if EU would coordinate it in a united common stance. By aiming to settle local differences for diversification plans, EU would gain greater bargaining power in negotiations with Russia.

As a final note, it should be reiterated that the European-Russian relationship is of a long term nature, since over the next couple of decades Russia will remain Europe's primary energy (especially natural-gas) supplier proving for nearly fourty percent of the overall EU energy needs (and up to three quarters of its gas needs), and Europe will remain the largest customer for Russian energy supplies (with Asian markets being secondary) and therefore an important source of finance for the Russian budget. Therefore, greater efforts for mutual cooperation are required in order to ease current tensions and provide for lasting solutions to the security greater efforts for mutual cooperation between the two regions involved in this relationship of energy inter-dependence.

The last EU-Russia summit, of 23 October, 2007, took this initiative in the right direction, stressing the need for a '*Reciprocity Clause'* for energy investment, and a two phase cooperation for a creation of a 'early warning' system that would, in phase one function as a mechanism for information exchange on new legislation and long-term risk and opportunities, and in phase two would include information sharing on short-term 'significant issues which could give rise to difficulties'.

Conclusion:

This work presented an overview of the geopolitical issues concerning the oil- and gas-pipeline relationship between Russia and EU. This relationship is based on mutual-interdependence, which involves major strategic competition in the area of diversification. Currently, diversification of supply, sources, transportation and markets is essential for Russian and EU energy market stability. However, this policy has a contradictory connotation for the two regions, since while for EU it implies diversification of sources, suppliers and transit routes away from over-dependence on Russia for Russia it means greater access to old as well as entrance into new-markets, both within and out of Europe. This relationship involves many players outside of the their territory, involving such states as Turkey, Central Asian countries, Ukraine and Belarus, as well as the US, cooperation with which is vital for the long-term energy security strategy between the two regions. The current state of mistrust and, therefore, tension between EU and Russia, as well as other involved

[80] Gazprom Company official website, at: *www.gazprom.ru*

[81] Liuhto Kari and Jumpponen Jari, "*The Russian Eagle has Landed Abroad*", Evidence concerning the foreign operations of Russia´s 100 biggest exporters and banks, Research Report No. 141, 2003. Lappeenranta University of Technology, at: *http://www.compiler.fi/idankaupan/tutkimukset/LTKK14.html*

regions, needs to be currently addressed though greater cooperation, intensive negotiations and consistency of transactions, which perhaps could eventually lead, if not to a mutually shared energy policy vision, than, at least, to a return of the energy relations to the mutually accommodating level they were at a few years ago.

Bibliography:

Books:
-Stern Jonathan, *The Future of Russian Gas and Gasprom* (Oxford, UK: Oxford University Press, 2005), p. 143

Articles and Reports:
-Biresselioğlu Mehmet Efe, "*South European Gas Ring Project: The role of Turkey and Greece",* RIEAS, Research Institute for Europe and American Studies, Greece, at:
http://rieas.gr/index.php?option=com_content&task=view&id=236&Itemid=67
-Cohen A., "*Backgrounder*", The Heritage Foundation, No, 1980, October 26, 2006, at:
http://www.heritage.org/Research/Europe/bg1980.cfm#_ftn37
-Czernie W., "*Structural Change in the European Gas Industry: Risk and Opportunities*," World Energy website, 2.6.2006, at: *www.worldenergy.org/wec*
-Filis Constantinos, "*Putin's Bid for Caspian Natural Gas Forces the Other Players to Reassess Their* Options", Ogel, Oil, Gas & Law Intelligence, Issue: August, 2007
-Ganova Aglika and Ben Ayed Nizar, "*European Union Energy Supply Policy: Diversified in Unity?"* Institut Europeen des Hautes Etudes Internationales, May, 2007
-"*Energy & Transport in Figures 2006, Part 2: Energy*", European Commission, Directorate-General for Energy and Transport, Brussels, 2006
-The Economist, European energy security, "*A Bear at the Throat*", 12.4.2007
- European Union, Energy Security and Transatlantic Cooperation, October, 2006, at:
http://www.eurunion.org/news/eunewsletters/EUInsight/2006/EUInsightEnergyOct2006.pdf
-Harks E., "*The Conundrum of Energy Security, Gas in Eastern and Western* Europe", The International Spectator, 3/2006
- Liuhto Kari and Jumpponen Jari, "*The Russian Eagle has Landed Abroad*", Evidence concerning the foreign operations of Russia´s 100 biggest exporters and banks, Research Report No. 141, 2003. Lappeenranta University of Technology, at: *http://www.compiler.fi/idankaupan/tutkimukset/LTKK14.html*
-Müller Friedemann, *"Europe Must Diversify Its Energy Sources",* Stifftung Wissenschaft und Politik Berlin, SWP, 2003, at:
http://en.internationalepolitik.de/archiv/2003/summer2003/europe-must-diversify-its-energy-sources.html
-Tsakiris Theodore George, "*The Eurasia Energy Complex," Defense & Foreign Affairs Strategic Policy*, 2. 2006
-Van Oostvoorn F. (ed.), "*Long term Gas Supply Security in an Enlarged Europe*", ECN, Dec. 2003
-Yergin Daniel, "Ensuring Energy Security", in: Foreign Affairs, Vol.85, No.2, March/April, 2006

Web based Research: (Thank Tanks, Research Houses, Institutes, Encyclopedias, Independent Web Portals, Official Company Websites, and Online Magazines)
-Alexander's Gas & Oil Connections Website, Vol. 8, Issue 11, 3.6.2003, North Central Europe, at:
http://www.gasandoil.com/goc/news/nte32320.htm
- Caspian Pipeline Consortium, official website, at: http://www.cpc.ru/
geis/publications/default/tech_papers/17th_congress)/1_4_14.asp
- Edison company official website, New Projects, IGI, at: *http://www.edison.it/edison/site/en/activities/gas/new-projects/*
-EurActiv Website, *"EU, Russia to Explore 'Reciprocity' in Energy Trade",* 17.10.2007, at:
http://www.euractiv.com/en/energy/eu-russia-explore-reciprocity-energy-trade/article-167662
-EIA Website, Russia Natural Gas page, at: *http://www.eia.doe.gov/emeu/cabs/Russia/NaturalGas.html*
-EIA Website, Russia Oil Exports page, at: *http://www.eia.doe.gov/emeu/cabs/Russia/OilExports.html*

Energy Information Administration , Caspian Energy, Caspian Sea Region, at: *http://www.caspianenergy.com/s/caspianenergy1*
- Energy Community for South Eastern Europe Official Website, at: *http://www.energy-community.org/portal/page?_pageid=34,64967&_dad=portal&_schema=PORTAL*
- Energy Industry Today, Russian Natural Gas Pipeline News, at: *http://energy.einnews.com/news/russia-natural-gas-pipelines*
-Energy Profile of Russia, Encyclopedia of Earth, at: *http://www.eoearth.org/article/Energy_profile_of_Russia#Oil_Exports*
-Gazprom Export Company website, Export Dynamics, at: *http://www.gazexport.ru/digits/?pkey1=00004*
-Gazprom Company Official Website, Europe Projects- Gasprom Export page, at: *http://www.gazexport.ru/?pkey1=000040000400001*
-German Economic Team in Belarus, "*Belarus as a Gas Transit Country*," Research Centre for the institute of Privatization and Management, at: *www.ipm.by/pdf/pp304e.pdf*
- Global Research, "*East European Nations Sign Black Sea-Baltic Sea Oil Pipeline Deal*", October 14, 2007, at: *http://www.globalresearch.ca/index.php?context=va&aid=7068*
-Hydrocarbons-Technology.com, "*Baku-Tbilisi-Ceyhan (BTC) oil pipeline*", at: *http://www.hydrocarbons-technology.com/projects/bp/*
-Milov, Vladimir., "*Russian gas sector developments and new European projects*", Institute of Energy Policy Website [News and Comments], September 2005, at: *http://www.energypolicy.ru/files/Presentation-Milov-Sept.20-2005.ppt*
-Milov Vladimir, Institute of Energy Policy, "*The role of Russia in the European energy security"*, Presentation Hearings at the Foreign Affairs Committee of the European Parliament, Brussels, February 28th, 2007, at: *http://www.energypolicy.rz u/files/Milov-Feb28-2007.ppt*
- Milov Vladimir, Institute of Energy Policy, Russia, Hearings at the Foreign Affairs Committee of the European Parliament, Brussels, February 28th, 2007, *http://www.energypolicy.ru/files/Milov-Feb28-2007.ppt*
- Negnum Information Agency, "Будущее Европы за нефтепроводы в Европу", 10.10.2007, at: *www.regnum.ru/news/897351.html*
- Trans-Caspian Oil, Princeton University, at: *http://www.wws.princeton.edu/wws401c/1998*
-The RZD-Partner, *"Gazprom to Boost Direct Sales in EU",* 20.11.2007, at: *http://www.rzd-partner.com/news/2007/11/20/315126.html*

Newspaper Articles:
-Agence France-Press, "*German, Russian Official Launch Work on Controversial Baltic Pipeline,"* 9.12.2005
- BBJ Hungarian Daily News, May 21, 2007, at: htt*p://www.bbj.hu/news/news_26659.html*
- Butrin Dmitri, Kommersant Daily Newspaper, May 14, 2007, at: *http://www.kommersant.com/p764997/r_529/oil_gas_pipelines_Russia_Central_Asia/*
--Ibrahimov R., The Journal of the Turkish Weekly Opinion Website, 25.2.2007, at: *http://www.turkishweekly.net/comments.php?id=2498*
- Kupchinsky, Roman, Radio Free Europe/Radio Liberty, "*EU's gas pipeline plan threatened by Hungary*", 26.03.2007
- New Europe, The European Weekly, 'Putin deal torpedoes Trans-Caspian gas pipeline plans', 17.05.2007, at: *http://www.neurope.eu/view_news.php?id=73862*)
-Russian News Wire, "Gazprom Marketing & Trading Ltd. Sets up Subsidiaries in US and France", at: *http://www.russianewswire.com/releases_headlines_details.php?id=3513*
-Vershinin Alexander, *"Russia strikes natural gas pipeline deal*", Associated Press, April 15, 2007 *http://www.usatoday.com/money/economy/2007-05-12-2585352601_x.htm*

Documents:
-Directive of the European Parliament and of the Council, Amending Directive 2003/55/EC of the European Parliament and of the Council of 26, June 2003 concerning common rules for the internal market in natural gas, at: *http://ec.europa.eu/energy/electricity/package_2007/doc/2007_09_19_explanatory_memorandum_en.pdf*

Apendix A:

Greatest Oil Reserves by Country, 2006

Rank	Country	Proved reserves (billion barrels)
1.	Saudi Arabia	264.3
2.	Canada	178.8
3.	Iran	132.5
4.	Iraq	115.0
5.	Kuwait	101.5
6.	United Arab Emirates	97.8
7.	Venezuela	79.7
8.	Russia	60.0
9.	Libya	39.1
10.	Nigeria	35.9
11.	United States	21.4
12.	China	18.3
13.	Qatar	15.2
14.	Mexico	12.9
15.	Algeria	11.4
16.	Brazil	11.2
17.	Kazakhstan	9.0
18.	Norway	7.7
19.	Azerbaijan	7.0
20.	India	5.8

Top 20 countries	1224.5 (95%)
Rest of world	68.1 (5%)
World total	**1,292.6**

NOTE: Proved reserves are estimated with reasonable certainty to be recoverable with present technology and prices. *Source: Oil & Gas Journal,* Vol. 103, No. 47 (Dec. 19, 2005). From: U.S. Energy Information Administration. http://www.eia.doe.gov/emeu/international/petroleu.html

Natural Gas Reserves by Country, 2006

Rank	Country	Proved reserves (trillion cu ft)
1.	Russia	1,680
2.	Iran	971
3.	Qatar	911
4.	Saudi Arabia	241
5.	United Arab Emirates	214
6.	United States	193
7.	Nigeria	185
8.	Algeria	161
9.	Venezuela	151
10.	Iraq	112
11.	Indonesia	98
12.	Norway	84
13.	Malaysia	75
14.	Turkmenistan	71/2,850bcm
15.	Uzbekistan	66
16.	Kazakhstan	65
17.	Netherlands	62
18.	Egypt	59
19.	Canada	57

20.	Kuwait	56
Top 20 countries		5,510
Rest of world		602
World total		**6,112**

NOTE: Proved reserves are estimated with reasonable certainty to be recoverable with present technology and prices. *Source: Oil & Gas Journal,* Vol. 103, No. 47 (Dec. 19, 2005). From: U.S. Energy Information Administration. http://www.eia.doe.gov/emeu/international/petroleu.html .

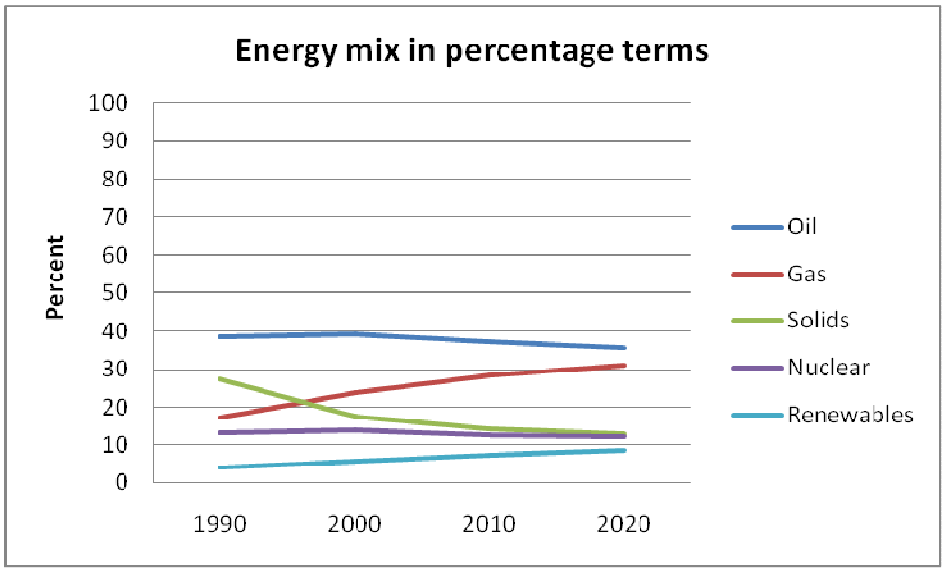
Energy

Energy Type/Year	1990	2000	2010	2020
Oil	562	625	650	650
Gas	250	375	505	560
Solids	400	280	250	235
Nuclear	190	220	225	220
Renewables	62	94	130	155
Total	1464	1594	1750	1820

Energy Type/Year	1990	2000	2010	2020
Oil	38.4%	39.2%	37.1	35.7
Gas	17.1%	23.6	28.4	30.8
Solids	27.3%	17.6	14.3	12.9
Nuclear	13.1%	13.8	12.7	12.1
Renewables	4.1%	5.8	7.3	8.5*
Total	100	100	100	100

Source: European Commission, DG TREN, Green Paper on Energy Efficiency, "Doing More with Less", 2005.
* EU target rate for renewables, according to its Energy Strategy is 20% by 2020.

Graph: EU Existing and Predicted Energy mix



Source: European Commission, DG TREN, Green Paper on Energy Efficiency, "Doing More with Less", 2005