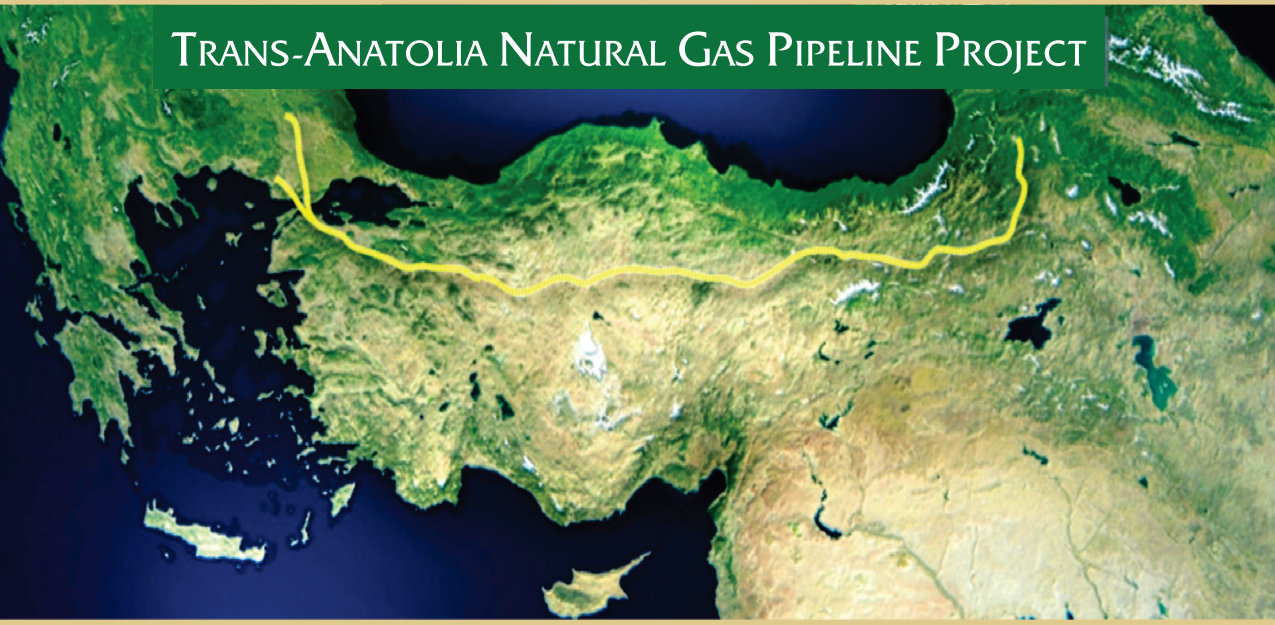
The Conference

TRANS-ANATOLIAN GAS PIPELINE:

CHALLENGES AND PROSPECTS FOR THE BLACK SEA COUNTRIES AND THE BALKANS



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Trans-Anatolian gas pipeline: Challenges and Prospects for the Black Sea countries and the Balkans

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PREFACE

As is known, the diversification of sources of gas supplied to the EU market is an important factor of energy security and, therefore, of the EU energy policy which has been stepped up in the last decade. The ample gas reserves of the Middle East and the Caspian region are an alternative to existing sources of natural gas. Azerbaijan is among the countries that attract attention not only because of its significant reserves of natural gas, but also due to its capacity to transport natural gas from Turkmenistan, Kazakhstan and Uzbekistan. The aggregate reserves of natural gas in these four countries account for about 70 per cent of natural gas of Russia, one of the main suppliers of this type of energy to the European market. However, in contrast to Russia, these countries do not yet have a developed system of pipelines to export their gas to the EU. The creation of such a system is a major task for the next decade for the EU, these four alternative suppliers of gas and for transit countries.

In January 2011, EU President Jose Manuel Barroso visited Azerbaijan. The outcome of the visit was the signing of the Baku Declaration on the "Southern Gas Corridor" whereby Azerbaijan committed to ensuring "significant" long-term gas supplies to EU countries. In early March 2011, the Declaration was ratified by the Parliament of Azerbaijan.

Another important development in 2011 was the signing of a package of three gas agreements between Azerbaijan and Turkey in Izmir on 25 October. The agreements provide for the purchase on the part of Turkey of a portion of Azerbaijani gas from Stage 2 of the Shah Deniz project and the transit the rest to Europe. Azerbaijani President Ilham Aliyev described

the agreements as yet another contribution to the creation of the Southern Energy Corridor (SEC). One of the agreements stipulates the conditions of purchase and sale of gas from Shah Deniz and another is related to the transit of Azerbaijani gas via Turkey. This agreement was also signed by the presidents of BP-Azerbaijan and BOTAŞ. The third agreement provides for energy cooperation between Turkey and Azerbaijan and its signing crowned years of negotiations between the two countries on the price of Azerbaijani gas.

The SEC received a further boost from the idea of building a Trans-Anatolian gas pipeline (TANAP). This idea was first publicly announced by SOCAR President Rovnag Abdullayev at the Black Sea Economic and Energy Forum in Istanbul on 16-18 November 2011.

Just over a month later, on 26 December 2011, the Turkish-Azerbaijani Intergovernmental Memorandum of Understanding was signed in Ankara on joining the efforts of SOCAR and BOTAS in the construction and operation of the TANAP pipeline and work began on the feasibility study of the project. Finally, on 26 June 2012, an intergovernmental agreement on TANAP was signed between President Ilham Aliyev of Azerbaijan and Prime Minister of Turkey Recep Tayyip Erdogan.

The agreement on TANAP necessitated serious adjustments to the Nabucco project. The length of the proposed pipeline was greatly reduced because the construction of Turkish and Azerbaijani sections was no longer necessary. The implementation of the Trans-Anatolian gas pipeline also increased the chances for realizing the Trans Adriatic Pipeline (TAP) and ITGI (Turkey-Greece-Italy gas pipeline).

Thus, the TANAP project has changed the balance of energy interests and policies in the region both on the national level and within the private sector. Such large-scale changes in the interests of certain players are always fraught with new geopolitical and economic challenges.

On 28-29 September, the international conference, "Trans-Anatolian gas pipeline: Challenges and Prospects for the Black Sea countries and the Balkans", was held in Istanbul. The aim of the conference was to discuss various issues related to the construction of a new natural gas export route from the Caspian region to Europe.

Twenty-nine experts representing twelve countries (USA, UK, Turkey, Azerbaijan, Russia, Ukraine, Slovakia, Georgia, Armenia, Bulgaria, Romania and Poland) presented at the conference. This book is a compilation of most of these presentations.

The seven conference panels discussed the following themes: 1) TANAP: prospects for resolving the problems of energy security; 2) TANAP: Political challenges for the region; 3) TANAP and other projects of the Southern Energy Corridor; 4) TANAP: Trans-Caspian pipeline prospects; 5) Prospects for the development of gas markets in the Black Sea Basin; 6) Hydrocarbon transit revenue transparency in Georgia, Bulgaria, Turkey and Ukraine; 7) Prospects for the EU gas market.

The conference was joined by Members of Parliament from Turkey and Azerbaijan, representatives of the Azerbaijani, Georgian and Slovakian governments, the former American Ambassador to Azerbaijan, the president of SOCAR-Turkey, and experts from regional think-tanks.

The conference was organized within the framework of a project supported by the Black Sea Trust for Regional Cooperation (project of German Marshall Fund). The event was sponsored by the Revenue Watch Institute (RWI) and the State Oil Company of Azerbaijan Republic (SOCAR). The conference was organized by the Entrepreneurship Development Foundation, Baku, Azerbaijan.

Sabit Bagirov,
President of the Entrepreneurship Development Foundation

CHAPTER 1

TANAP: prospects for resolving the energy security problem

PROSPECTS FOR RESOLVING THE ENERGY SECURITY PROBLEM: TRANS-ANATOLIAN GAS PIPELINE

Necdet Pamir,
Chairman, Committee on Energy Policies, Chamber of Petroleum Engineers, Turkey

Introduction

Energy is one of the most important preconditions for economic and social development of any country. Although in some countries economic development has declined or even stopped, the population, especially in countries outside of the OECD, particularly in Asia and Africa, continues to grow, which increases the need not only for economic growth but also for power consumption.

Fuels such as oil, coal and gas continue to be major sources of energy and constitute 87% of the total consumption of energy sources[1] (Figure 1). It is expected that oil and gas will continue will account for a high proportion of total (56.8%) energy sources in the near future. According to some estimates, in 2035 the combined share of these two sources will fluctuate around 50%.[2]

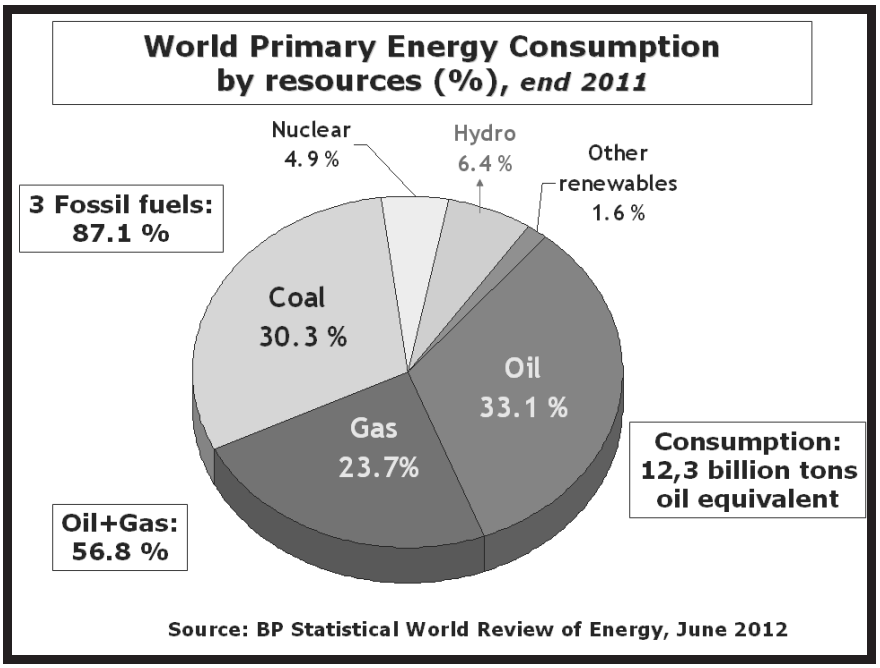
48% of proven oil reserves are found in the Middle East, about 8% in the CIS (including Russia) and 8% in African countries (Figure 2). 38% of proven reserves of natural gas are located in the Middle East, 36% in the CIS and 7% in Africa (Figure 3). Coal is distributed worldwide in geographically more "just" proportions.

Although the available fossil fuels can satisfy the growing demand for the coming decades, it is necessary to invest trillions of dollars to develop these resources and deliver them through different routes to international markets. In the period to 2035, world oil trade is expected to increase by 30% and of gas by 50%. The situation with gas trade being dominantly supplied by Russia poses a significant risk to the security of gas supplies and price stability for countries in need of this type of fuel. Therefore, along with the Middle East, the reserves of

[1] BP Statistical Review of World Energy, June 2012
[2] World Energy Outlook 2011, International Energy Agency

natural gas of Africa and the Caspian region are a vital and valuable source of strategic energy as they offer diversification opportunities.

Figure 1.



The new developments in natural gas markets are associated with the production of shale gas, which has become more viable thanks to the introduction of new and increasingly feasible technologies. Although, according to traditional methods of production it still requires a lot of investment, production of shale gas reduces US dependence on foreign sources of natural gas and can increase market surplus for some time, which will help to reduce the price of gas and, from the point of view of the buyers, have a positive impact on the terms and conditions of long-term agreements.

As part of these overall ratings, the availability of Caspian oil and gas to world markets not only contributes to the economic development and independence of producing countries but also is a source of income for transit countries. It strengthens the relations with producing countries and eventually reinforces the energy security of countries in need of gas, thus offering them broader options.

Figure 2.

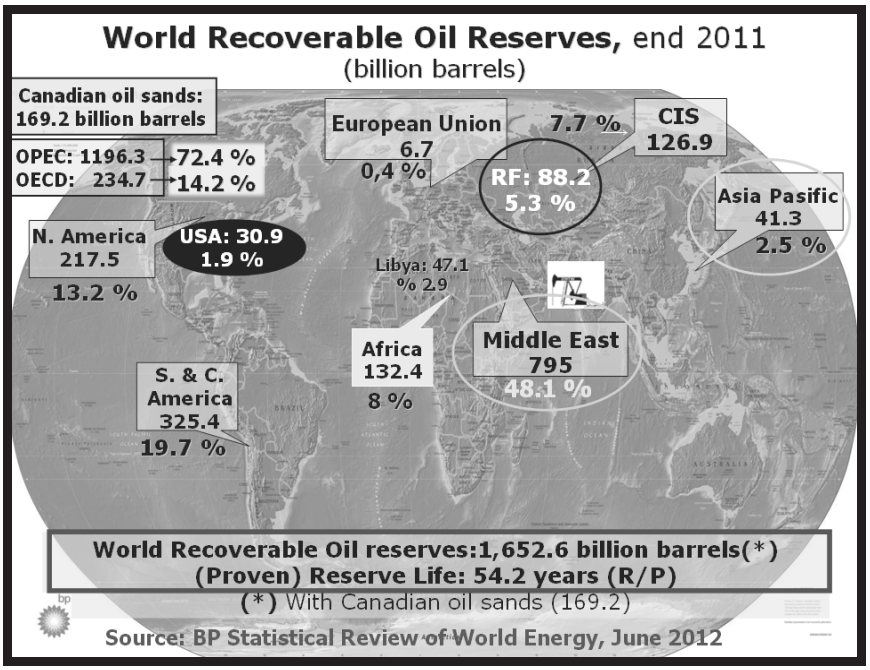
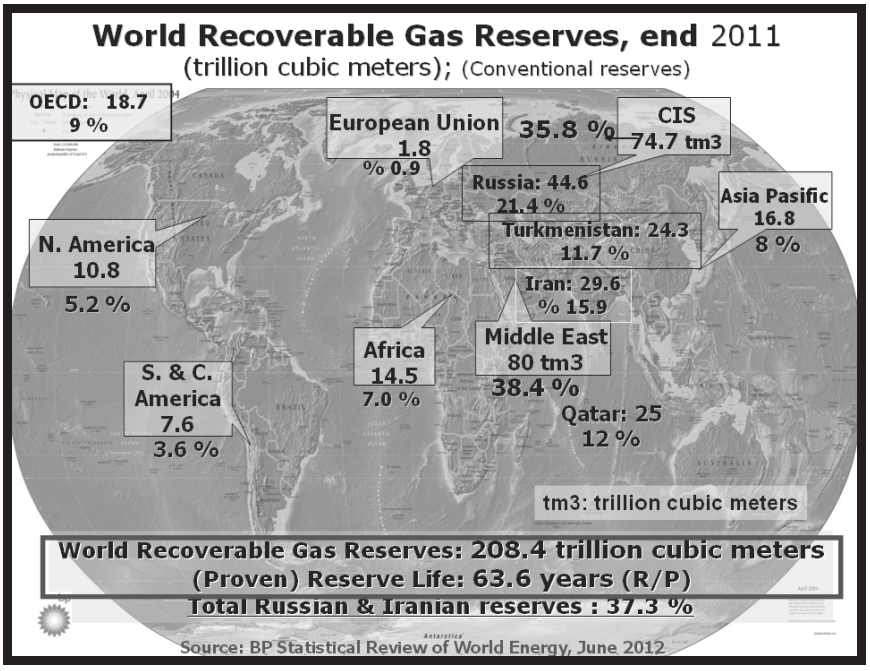


Figure 3.



One of the latest and most important examples for positive development of the natural gas market is the agreement on the Trans-Anatolian gas pipeline which will deliver to international markets the natural gas produced from the Azerbaijani fields of Shah Deniz (second phase), Shafaq-Asiman, Umid-Babek, Absheron, and ACG-deep water through Georgia and Turkey. Afterwards, each of the following phases of the project will demonstrate improved living standards in producer, consumer and transit countries. The successful outcome of this project, which offers an important new option for the natural gas markets thus far dominated by Russia, will become a source of inspiration for new projects and investments.

Whether it is this or any other international pipeline project, respect for the interests of all parties is vital to its eventual success. We must not forget that projects focusing on the interests of only one country or party (company) are unlikely to succeed in terms of the local and global energy security. They are actually doomed to fail. Energy security is not a problem so primitive to be resolved by one country on its own.

Attempts to create energy security require the participation of many actors from the place of production to the point of consumption, including transit countries. This chain touches on the interests of the governments of producing countries, investor companies, everyone involved in decision-making and consumers themselves – each link of the chain has its own interests. A "crack" occurring in any of these components or a dominance of one party's interests over others may undermine the efficiency of the entire chain. So international pipeline projects require a delicate approach and professionalism.

Energy security

The International Energy Agency defines "energy security" as "an uninterrupted energy supply at a reasonable price and with environmental considerations". This term came into being after a series of events which took place in the global oil market in the 1970s. The price of crude oil in 1972 was less than $3.5 a barrel, in 1974 it increased four times to exceed $12. After Egypt and Syria attacked Israel on 5 January 1973, the Arab countries introduced an embargo against Israel and its allies in Europe and the United States. The International Energy Agency (IEA), which along with OPEC is one of the most important actors, was established by OECD countries after the Arab oil embargo of 1973-1974. In the

1980s, the IEA started to assert themselves in the international oil market and acted as a balancing force against OPEC in the following years.

For many years, the IEA has been conducting a policy to prevent and resolve problems in oil markets (delivery failures, price hikes resulting from the said failures, etc.). However, at present it has to deal not only with oil but also with natural gas, which accounts for 24% of global energy consumption and continues to rise.

In broader terms, energy security means timely and uninterrupted supplies of sufficient quantities of energy at a reasonable price and from abundant, reliable and diverse sources. The absence of one or more of the above conditions would compromise energy security. Since economic growth and social development are strongly associated with energy security, it becomes vitally important for all countries.

Certain circles perceive the concept of energy security as protection of the energy base by the army and national security agencies. However, if we proceed from the definition of energy security, the semantic scope of this term covers not only physical security.

Risks and hazards associated with energy security are divided into short- and long-term ones.[3] Short-term risks are related to political and technical failures or with malicious intent. Long-term risks are associated with problems with the supply of goods by reason of delay in payment. Any disruption, whether short- or long-term, will inevitably lead to higher prices, deterioration of the situation of consumers and economic losses.

The best solution to the problems associated with long-term risks is the timeliness of investment based on forecasts of economic development and environmental issues. To provide for short-term energy security, it is necessary to develop the capacity of the energy system to respond to unexpected changes in supply and demand.

The known energy sources can provide us with sufficient energy in the coming decades.[4] In terms of proven reserves and existing energy consumption, the available reserves of oil can provide us with energy for another 54 years, the

[3] http://www.iea.org/subjectqueries/keyresult.asp?KEYWORD_ID=4103

[4] By this we mean that the common view on an imminent depletion of oil and gas sources does not appear very reasonable.

reserves of natural gas can last for 64 years and the reserves of coal for 112 years[5] (Figures 2 and 3). However, the development of these reserves and the establishment of the necessary processing facilities and transportation infrastructure (pipelines, tankers, etc.) until 2035 requres investment in the amount of $37.9 trillion.[6] $16.9 trillion of this amount will have to be invested in the power engineering sector, $9.5 trillion in gas production, $10 trillion in oil and $1.2 trillion in coal. Any delay of this investment may lead to serious problems in the field of energy security in the future. Major investment requires stability, legal framework and other conditions.

Another approach to energy security lies through extensive work in the energy sector (oil, gas, coal, renewable energy, etc.), secondary sources of energy (electricity, refining) and methods of transportation (transportation network, pipelines, ports, tankers, etc.), as well as prognostication and preparatory work in these areas.

Equally important in ensuring energy security is an understanding that energy security does not end at the border of a country. Energy security can only be achieved if a continuous flow is ensured down the line from a production site to the point of energy consumption, including the entire journey of the flow. Therefore, in making decisions on projects involving more than one country one must take into account the common interests and expectations of all the stakeholders involved.

Overall energy picture of the world

According to the UN, the world population will reach to 8.6 billion[7] by 2035 compared to 6.8 billion in 2009. In parallel to this, there will be a growth of urbanization. While in 2009 the urban population was 3.4 billion, in 2035 it is expected to increase by 1.9 million to reach 5.3 billion people.

The combination of population growth with the necessities of a new life in the cities inevitably increases energy consumption without which there can be no growth. And if the energy demand is met in a timely manner and in line with the conditions suitable for all the actors, this will secure development and stability.

[5] BP Statistical Review of World Energy, June 2012; pages 6, 20 and 30

[6] World Energy Outlook 2011, International Energy Agency

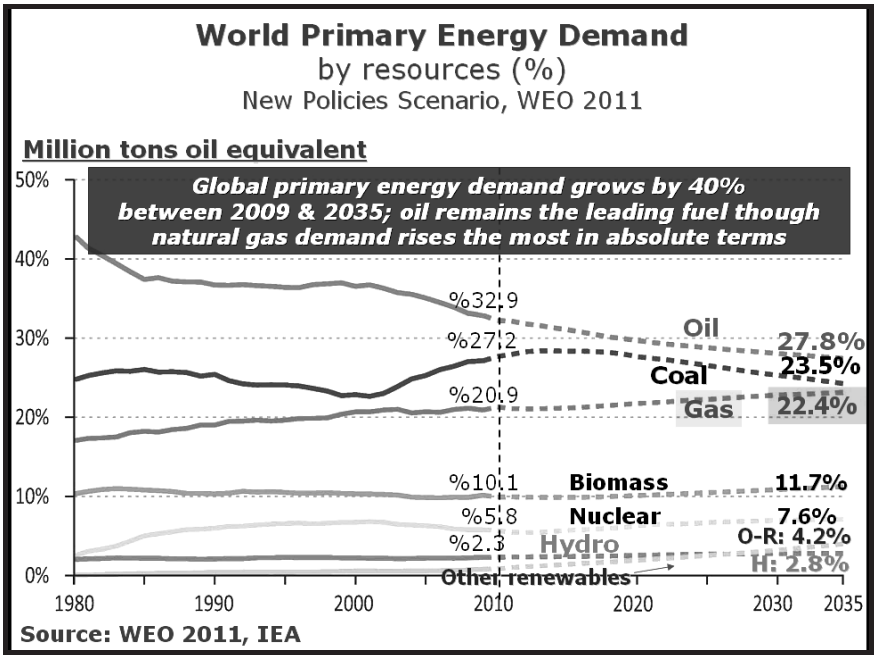
[7] World Energy Outlook (WEO) 2011-Global Energy Trends, page 59

However, any problem anywhere in the energy chain may undermine energy security.

According to an IEA World Energy Outlook 2011[8], between 2009 and 2035 the world's energy demand is expected to grow by 40% (Figure. 4). Growth in demand for oil, which is the most important type of fuel in the transport sector, will constitute 18% and for coal 25%. As for natural gas, it is expected that increase in gas demand will be equal to that for oil and coal. Growth in the demand for nuclear energy is expected to be made up mainly by China, Korea and India. The total percentage of the demand for modern renewable energy sources, despite exceeding the demand for other sources, will not even approach the level of consumption any kind of fossil fuels by 2035.

As already mentioned in the introduction, up to 87.1% of the energy consumed in the world is produced from fossil sources (oil, natural gas and coal).

Figure 4.



[8] According to the IEA's 2011 New Policies Scenario.

Since the combined share of oil and gas will exceed that of other types of fuel in the coming years (51.5% in 2035), the production of these energy sources, the development of their transportation to the regions of consumption will continue to be of vital importance in terms of global energy security.

The geographical location of proven oil and gas reserves creates inevitably leads to a struggle for control over these sources. Countries that are major energy consumers develop strategies to gain control over these sources, their transportation and trade. Sometimes these strategies translate into aggression against countries or border changes. The situation in the Middle East and Africa is evidence of this cruel struggle.

Figure 2 and Figure 3 show the geographical location of proven oil and gas reserves in the world.[9]

According to these maps (Figures 2 and 3), 48.1% of the world's proven oil and 38.4% of natural gas reserves are located in the Middle East. The CIS, including Russia, has 7.7% of the world's oil and 35.8% of gas reserves.

Picture of energy demand (2010-2035)

In terms of energy demand, 21.3% of the world's energy is consumed in China, 18.5% in the U.S., 13.8% in the EU. OECD countries consume 45%, while 55% is consumed by the countries that are not members of the OECD. The Middle East consumes only 6.1%, Russia 2.5% and Turkey 1%. Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan account for 1.1% of the world's total energy consumption.

According to the International Energy Agency[10], the world's energy demand is expected to increase by 40% in the period up to 2035 (energy demand currently equal to approximately 12.2 billion tons of oil will reach 17 billion tons in 2035).

Oil, which stll accounts for 33% of global energy consumption, will continue to be the most popular type of fuel in 2035, especially in the transport sector (even if its share will reduce to 27.4% by then). Second to oil will be coal (24.1%) and third natural gas (23%). At a time when the demand for biofuel and renewable energy (except for hydroelectricity) increases, the fate of nuclear fuel after the

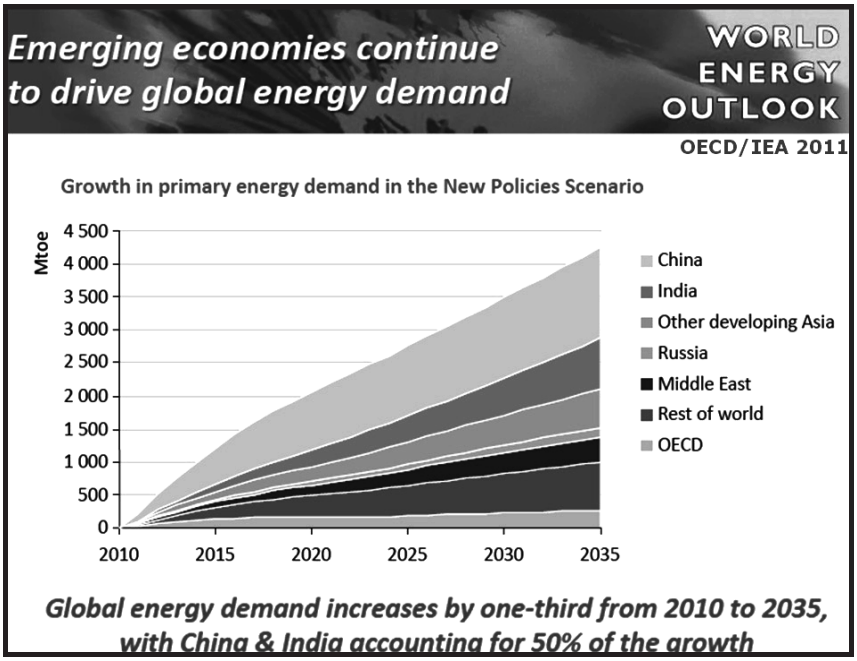
[9] The map reflects billions of barrels of oil and trillions of cubic meters of natural gas. Indicated underneath the numbers is the proportion of a given region or country in world's total reserves.

[10] World Energy Outlook 2011, International Energy Agency

Fukushima disaster is rather vague. The construction of new reactors is still on the agenda in China, India and Russia.

Largely due to an increase in the energy demand of the countries that are not members of the OECD, primarily China and India, the global energy demand is expected to increase by a third in the period from 2010 to 2035 (Figure. 5). Approximately 90% of the growth in demand will come from countries outside of the OECD.

Figure 5.



Picture of oil demand (2010-2035)

The demand for oil is expected to increase by 18%, while daily demand will rise from 87 million to 99 million barrels in this period. The current share of OPEC in the supply of oil is expected to rise from 42% at present to 51%, while among countries that are not members of OPEC the supply is expected to increase, especially on the account of Brazil, Kazakhstan and Canada.

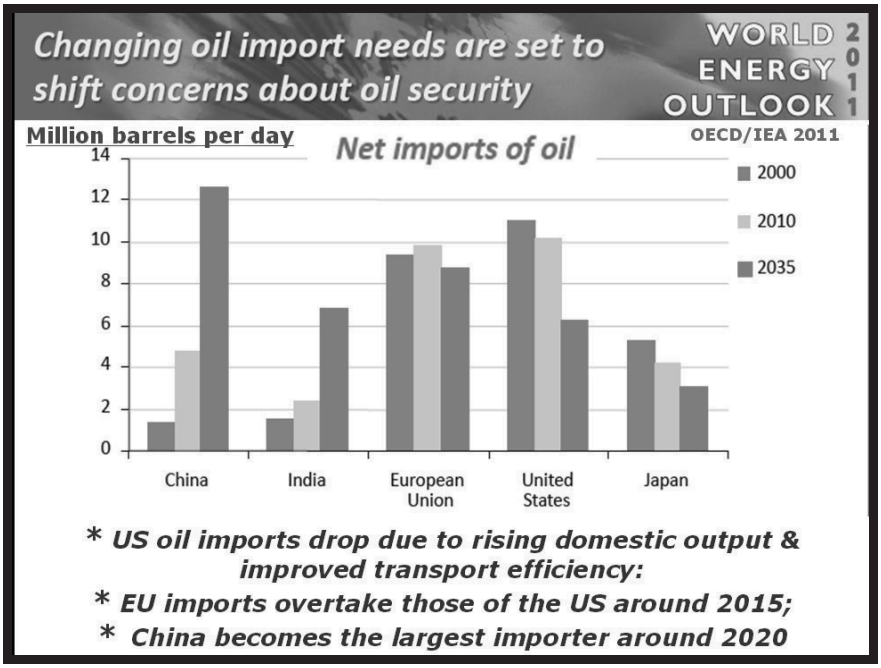
In terms of the global "equation" of oil supply, the rapidly growing demand for oil, particularly typical of Asian countries outside of the OECD, is the main cause of change and new conflicts. No matter how major oil importers the U.S. and the EU may be, China's demand for imported oil will exceed that of the U.S. in the next decade, whereas India's demand will approach that of the EU (see Figure 6).

The United States, which itself accounts for 20.5% of the global consumption of oil, currently relies on imports by 45%. Especially after the Second World War the interest of Western oil-consuming countries led by the U.S. was focused on the Middle East, which has the richest oil reserves requiring minimal costs for development. Accordingly, the strategies were and still are being developed[11] to exercise control over these resources and ensure their uninterrupted operation. The EU has prepared countless documents in this direction, some of which have been put into practice. On the other side of this "equation" is Russia, which has quite cleverly used its ample oil and gas reserves not only as an economic but also as a foreign policy tool. China has joined many of its companies vertically into three large companies, thus emerging as a strong player in the global market.

Turkmenistan, Kazakhstan, Iran, Iraq and Africa are among the regions where the influence of China is quite strong. From the standpoint of energy security, the importance of the Asia-Pacific and South China Sea regions is expected to increase in the coming years. These regions have become the centers of attention for global strategic forces, first because they want to exercise control over the routes of transportation of energy to this region due to a significant increase in the energy demand and, secondly, they want to exercise control over and fight for the energy sources in this part of the world.

[11] The first example of such strategies is the agreement signed by U.S. President Roosevelt with the King of Saudi Arabia on board USS Quincy in 1945 (this fact was not recorded). In subsequent years, the doctrines of Truman, Eisenhower, Nixon and Carter and a number of other agreements were concluded in order to establish control over energy sources. These decisions state not only the benefits but also the forced acquisition by aggression. The most famous part of the Carter Doctrine proposed after the Iranian Islamic Revolution and the Soviet occupation of Afghanistan says: "We should openly declare our position: An attempt by any outside force to seize the Persian Gulf will be regarded by us as a threat to vital U.S. interests, and such attempts will be stopped at any cost, including the use of military force."

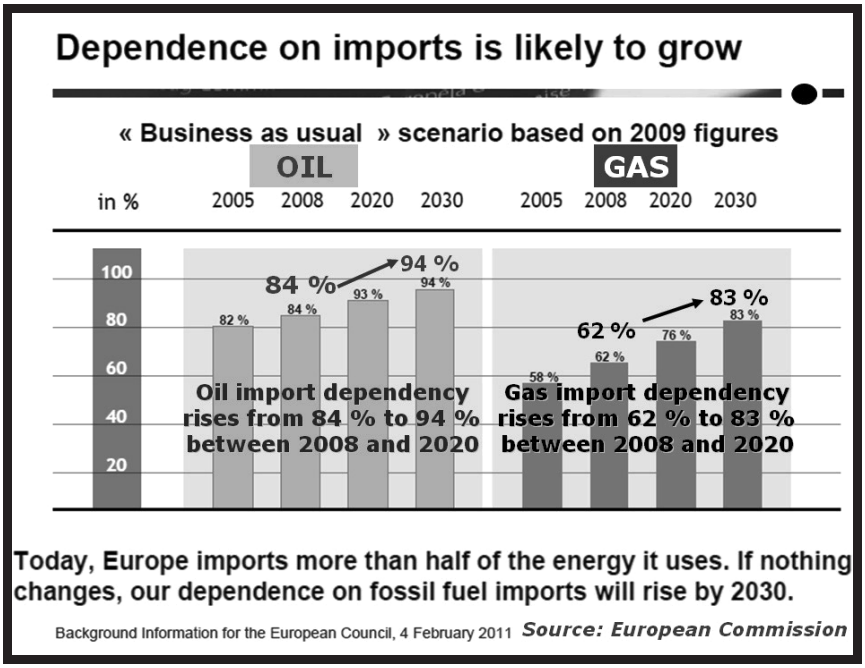
Figure 6.



The EU dependence on three main sources of energy (currently 14% of the world's total) continues to grow. If this trend continues, the EU dependence on oil will rise from the current 84% to 94% in 2030. The current level of the EU dependence on natural gas is 62% and will increase to 83% by 2030 (Figure 7). The EU, which largely depends on Russian supplies now, is trying to lower this dependence to less than 30%. In this regard the EU intends to implement the Southern Gas Corridor project. According to forecasts, the EU gas demand will reach 540 bcm in 2035.[12] In 2011, gas production in the EU was equal to 155 and consumption 448 bcm.[13] Thus, imports of gas amounted to 293 bcm.

[12] World Energy Outlook 2011, International Energy Agency, Primary gas demand trends
[13] BP Statistical review of World Energy, June 2012, pages: 22, 23.

Figure 7.



Picture of gas demand

Natural gas is becoming increasingly popular as a cleaner and more efficient type of fossil fuel. In the period to 2035, the demand for natural gas is expected to increase by 1.7%.[14] This means that the demand for gas is likely to be 4.75 trillion cubic meters. According to forecasts, 81% of growth in demand will come from countries outside of the OECD. It is expected that gas consumption in China will increase from 110 bcm now (2010) to 500 bcm in 2035. If we compare consumption sectors, the highest growth in demand is observed in power engineering.

Picture of gas supply

The last few years have seen a focus on the development of new technologies for the production of shale gas, which has led to a significant reduction of its cost. This positive process, especially in the U.S., has translated in an increased production of conventional gas. The U.S., which imports about 13% of its gas

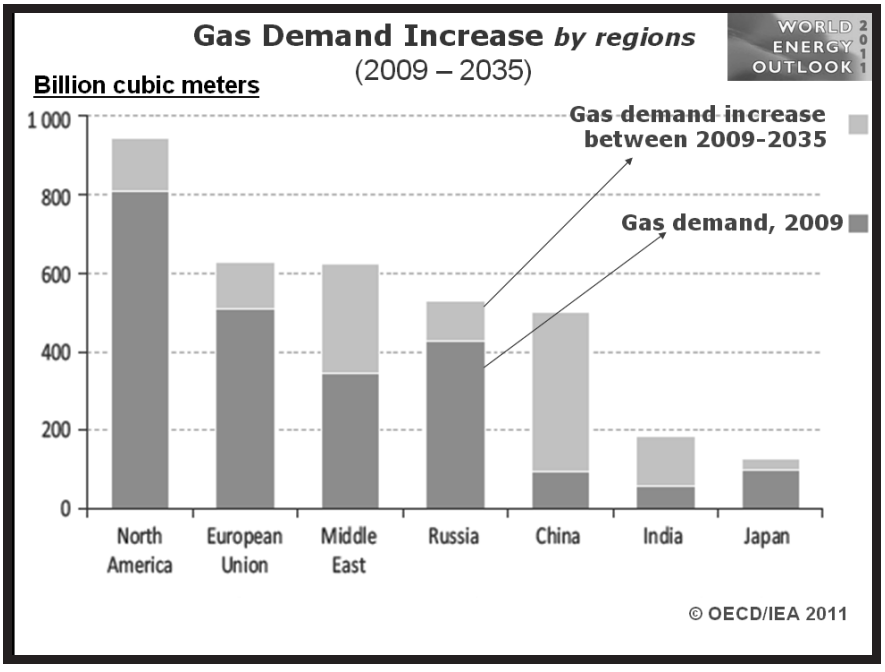
[14] World Energy Outlook 2011, International Energy Agency, Primary gas demand trends, page 156

consumption, has significantly reduced imports, which has led to a surplus of the product in international markets. This has affected the prices of liquefied natural gas (LNG). Many countries supplying natural gas, led by Russia, were forced to make changes to their long-term contracts with a positive inpact on consumers, including the lowering of prices for the product. This process is still proving effective.

Russia is the most influential player in the global natural gas markets as its reserves amount to 44.6 trillion cubic meters (21.4% of world's total). It produces 607 bcm[15] of gas a year. In terms of production of conventional gas, it will continue to maintain its strong positions in the coming decades. According to the New Policies Scenario of the International Energy Agency, production of conventional gas in Russia will reach to 860 bcm in 2035. China, in turn, is becoming not only the most important consumer but also the most important producer. It is expected that the production of conventional gas in China in 2035 will reach 290 bcm (currently it is equal to 102.5 bcm). Other major producing regions are the Middle East and Africa.

China, India and the Middle East are among the regions which will significantly increase their demand for natural gas by 2035.

Figure 8.



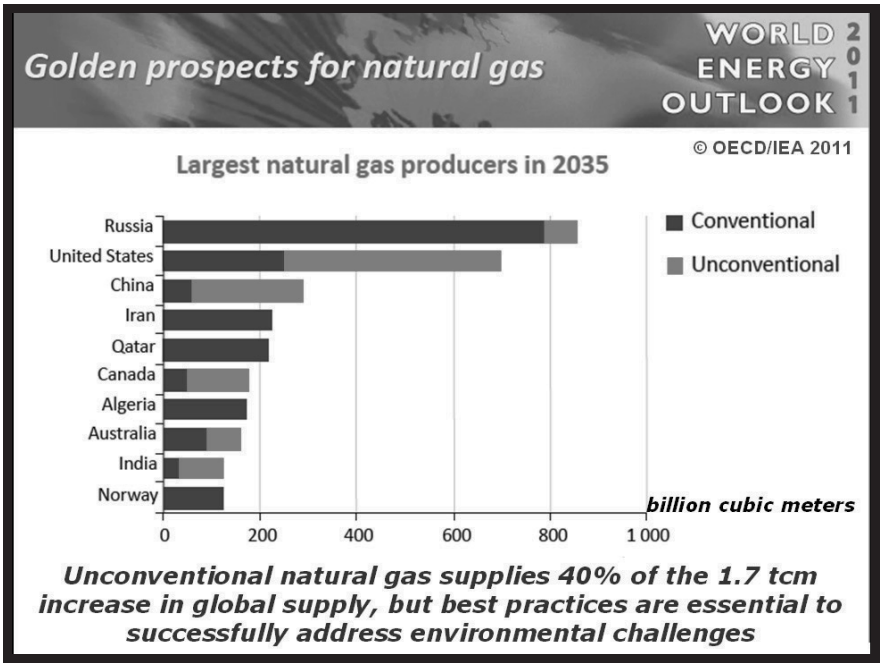
[15] BP Statistical Review of World Energy, June 2012

The growing demand is expected to be met by increasing production of conventional gas in countries such as Russia, Iran, Qatar, Algeria and Norway. By 2035, gas production will significantly increase in Azerbaijan, Uzbekistan, Turkmenistan and Kazakhstan. It is believed that these countries will produce a total of 320 billion cubic meters in 2035 [16]. If we exclude from this volume the domestic demand in these countries, the export potential of these countries in 2035 should be equal to about 130 bcm of gas (Figure 9).

Azerbaijan and the importance of Caspian hydrocarbons in terms of global energy security

Although Caspian energy resources currently account for not more than 1.4% of global consumption[17], these resources represent vital importance for the social and economic development of the region. In addition to diversiying energy resources, they clearly contribute to global energy security.

Figure 9.



[16] World Energy Outlook 2010, International Energy Agency, Caspian domestic energy prospects

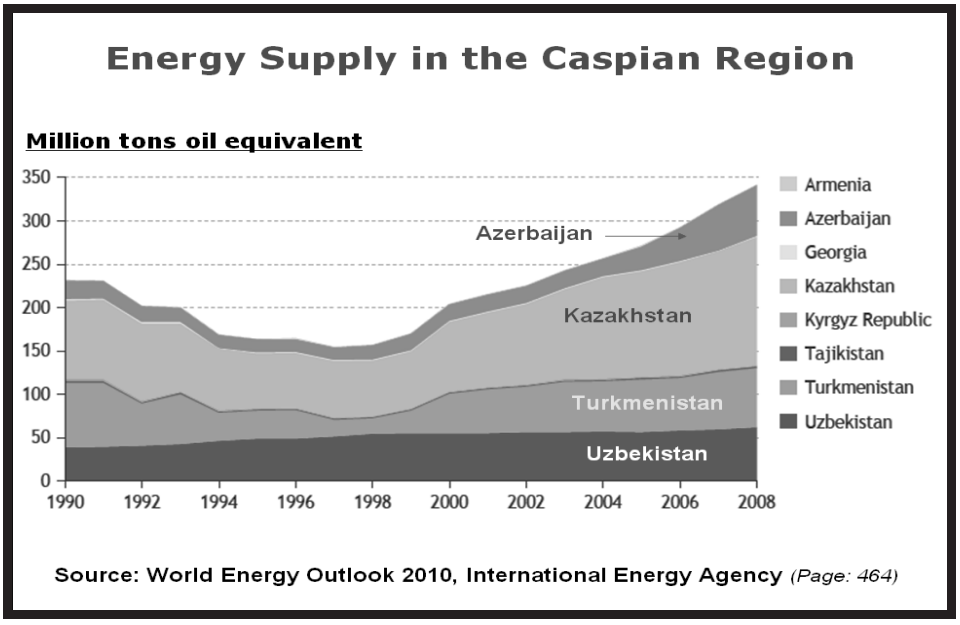
[17] World Energy Outlook 2010, International Energy Agency, Caspian domestic energy prospects, Chapter 16, page: 461

As new sources are discovered and the energy potential of the region increases, so do the possibilities of oil and gas exports. According to the International Energy Agency, if the energy efficiency of Caspian region countries reaches the level of the OECD, it will enable them to save half of the energy they consume now. In other words, the volume of hydrocarbon exports from these countries may double only by improving their energy efficiency.

The countries possessing significant reserves of oil and natural gas in this region include Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan. Energy production in the said four countries since 1990 is shown in Figure. 10.

Immediately after the collapse of the Soviet Union, production of oil and natural gas in this region significantly decreased.[18] But as international capital started to concentrate in this region, the production of both oil and gas significantly increased. Whereas in 1996 Kazakhstan produced 450,000 barrels of oil per day, in 2002 the volume of production increased to 1 million barrels and in 2009 to 1.6 million barrels per day. Similarly, oil production in Azerbaijan increased significantly after 2004 from 300,000 barrels to 1.1 million barrels per day in 2010.

Figure 10.



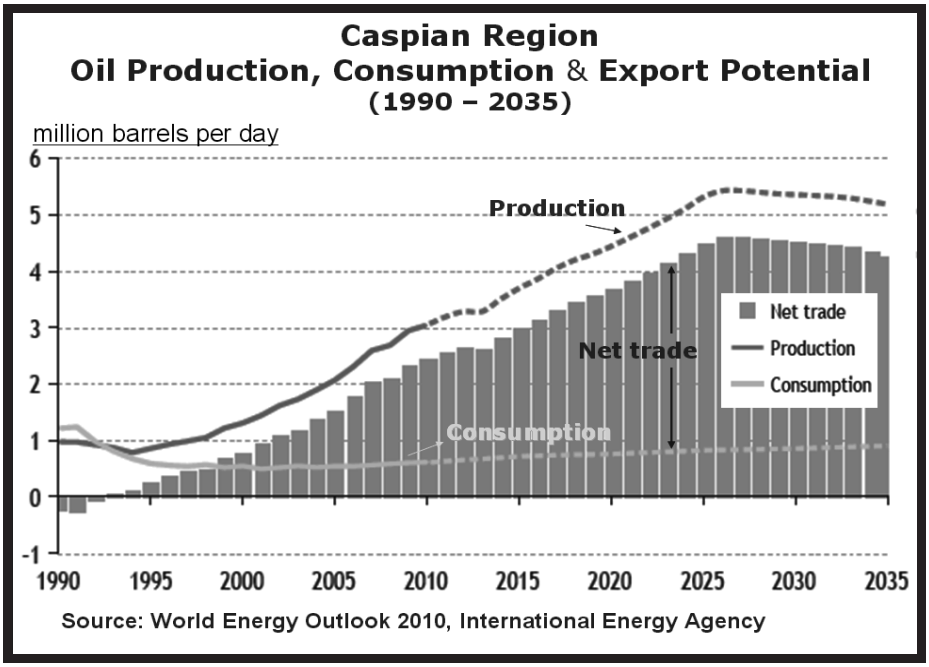
[18] For example, whereas in 1991 Turkmenistan produced 84 billion cubic meters of gas, due to certain "problems" with Russia this volume dropped to 13 billion cubic meters in 1998. At the end of 1999 production picked up and later reached 70 billion cubic meters.

Oil and gas supply potential of the Caspian region

In addition to the possibility meet the growing demand of regional countries, the Caspian region, while ensuring the diversity of sources, can play a major part in global energy security. Besides political reasons, the realization of this potential is hampered by problems of financing major projects and the fact that almost all of the existing export systems were built through Russia. In recent years, however, these problems have been gradually resolved.

Considering the capacity of such giant fields as Tengiz, Karachaganak, Azeri-Chirag-Guneshli, and the capacity of new fields, the International Energy Agency predicts a growth in oil production in the region from 2.9 million barrels per day in 2009 to 5.2 million barrels a day in 2035[19] (Figure. 11). Kazakhstan and Azerbaijan play a special role in this growth of production. Much of the increase will be channeled into exports and reach the volume of 4.6 million barrels per day in 2025. And this growth, in turn, will require the construction of a major new pipeline.

Figure 11.

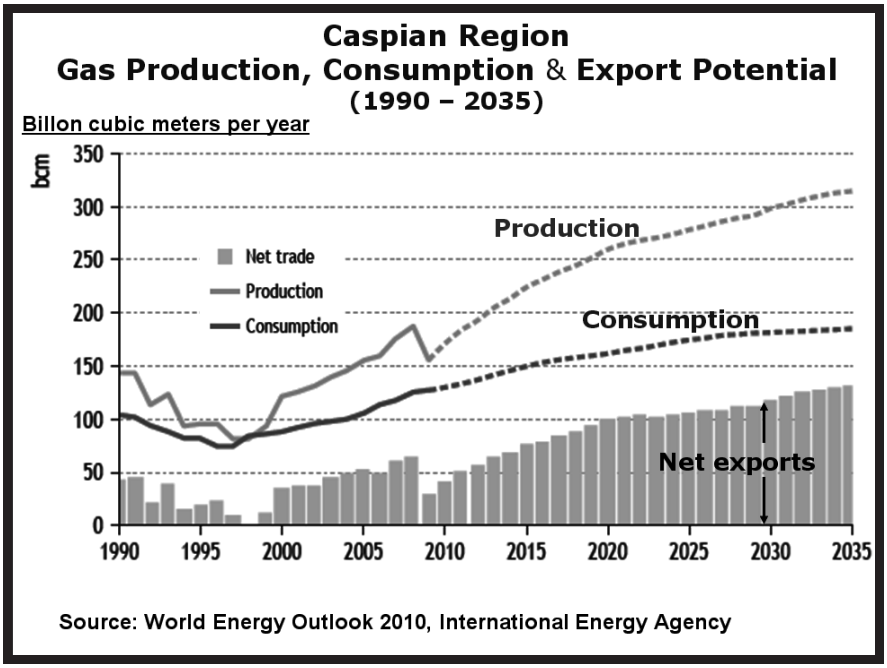


[19] World Energy Outlook 2010, International Energy Agency, Caspian domestic energy prospects, HYDROCARBON RESOURCES AND SUPPLY POTENTIAL: What will it take to unlock the Caspian's energy riches?, page 495 (New Policies Scenario)

Gas production in the region is also expected to increase from 159 bcm per year (2009) to 310 bcm per year (2035) (Figure 12). The key contributor to this process will be Turkmenistan and then Azerbaijan and Kazakhstan. And whereas in 2008 this region exported 63 bcm of gas, the figure is expected to increase to 100 bcm in 2020 and to 130 bcm in 2035.

According to the forecasts, Azerbaijani gas exports are expected to reach 35 bcm in 2035. These exports will almost entirely go to European countries through Turkey. A large part of the Turkmen gas is currently exported via Russia. At this stage and in the near future, the most realistic and attractive market for Turkmenistan may be China.

Figure 12.



Economic and strategic importance of hydrocarbons for Azerbaijan and other countries of the region. ACG, Shah Deniz, BTC and SCP.

The most important condition for real economic and foreign policy independence of the newly emerged republics is the transit of oil and gas through non-Russian routes with direct access to international markets. Since all export routes

(pipelines, water pipelines, railways) were constructed in the Soviet era in such a way as to pass through the territory of Russia, it is vitally important for newly independent states to use new and alternative routes. Therefore, the issue of exports of oil and gas products through new routes bypassing Russia has become the subject of intense struggle.

The newly independent states were joined by the United States in their desire to implement oil and gas export projects bypassing Russia. The East-West Corridor strategy was proposed. Its essence boiled down to exporting Azerbaijani, Kazakh and Turkmen oil and gas to Europe bypassing Russia and Iran. It was assumed that this strategy will be a major step towards economic and foreign political independence for the said countries. Thus, after a protracted and heated debate one such project, the Baku-Tbilisi-Ceyhan (BTC) pipeline, was implemented to transport crude oil.

Following investment on the part of an international consortium established for the development of the fields of Azeri-Chirag-Guneshli, further investment was made in the BTC pipeline, which was supposed to deliver oil to international markets via Georgian and Turkish territory and the "Heydar Aliyev" terminal in Ceyhan. The Azerbaijani oil, which began to be pumped into the 1,768-km pipeline on 10 May 2005, reached the "Heydar Aliyev" terminal in Ceyhan on 28 May 2006, while the first tanker was dispatched from Ceyhan on 4 June 2006.

This strategic success was followed by the development of the Azerbaijani field of Shah Deniz field and the transportation of gas into the Turkish natural gas network in Erzurum through a pipeline running parallel to the BTC. The international consortium developing the Shah Deniz field, which was discovered in 1999, includes: BP (25,5% - operator), Statoil (25.5%), SOCAR (10%), Lukoil (10%), NICO (10 %), Total (10%) and TPAO (9%). The contract area, which has gas reserves of 1 trillion cubic meters[20], is developed in two stages. The first stage, in effect since 2006, guarantees a maximum of 8.6 bcm of gas per year. Turkey currently imports gas produced from Shah Denizunder the first stage of development. The agreed gas volume is 6.6 bcm. In 2011, Turkey imported 3.8 bcm of Azerbaijani gas, or 9% of its needs.

[20] http://www.bp.com/sectiongenericarticle.do?categoryId=9006668&contentId=7015092

The start of the second phase of production at Shah Deniz is scheduled for 2017.[21] It is expected that the second phase will enable the production of up to 16 bcm of gas in addition to the existing production. The project is expected to cost $25 billion.

According to the agreement signed between the Republic of Azerbaijan and the Republic of Turkey (in Istanbul on 26 June 2012), the gas to produced under Phase Two will be pumped through the Trans-Anatolian Gas Pipeline (TANAP) which will run along the same route at the SCP.

Figure 13. The Baku-Tbilisi-Ceyhan oil pipeline, the South Caucasus Pipeline (SCP)

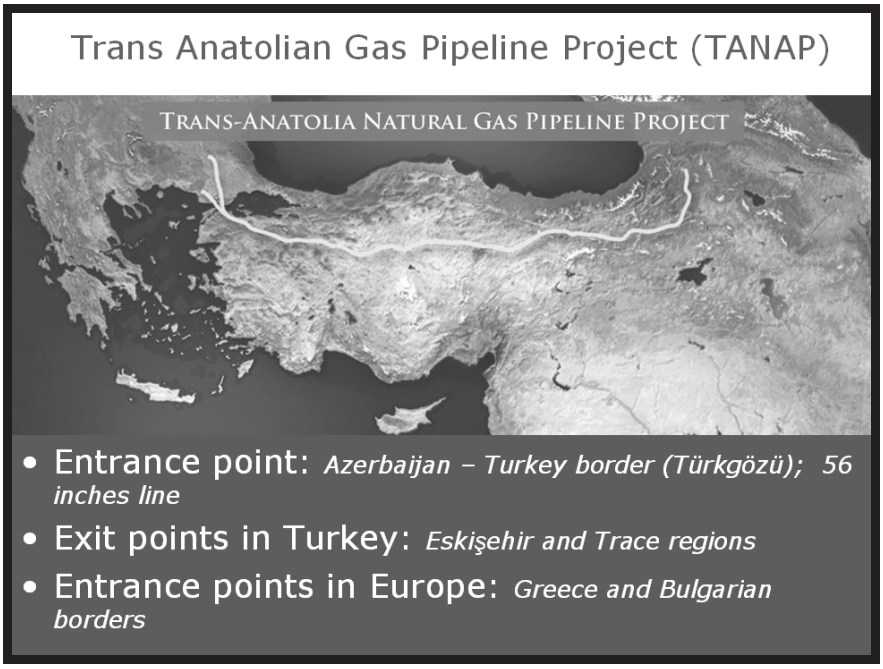
It was agreed that at the first phase (2018) 16 billion cubic meters of gas a year will be pumped through TANAP, 23 bcm during the second phase (2020) and 31 bcm during the third (2023). It was also agreed that in addition to the existing contract, additional 6 bcm of Azerbaijani gas will be provided under the first stage. 10 out of 16 bcm to be produced during the first phase will be delivered to

[21] http://www.bp.com/sectiongenericarticle.do?categoryId=9006668&contentId=7015092

Europe, Bulgaria and/or Greece through TANAP. At the current stage, the issue of the pipeline that will deliver gas to Europe has not been fully resolved yet.

The ambitious NABUCCO project, which was proposed before agreements on TANAP were reached, was not successful due to the problems associated with the supply of gas, the negative geopolitical environment and the fact that the project took into account only the interests of importing countries (EU and non-EU countries owners of NABUCCO). After the TANAP project was signed, NABUCCO narrowed its scope and goal to become NABUCCO-West whereby this pipeline is to receive Azerbaijani gas on the border between Turkey and Bulgaria and/or Greece and send it to Europe. Another contender for the supply of gas from the Turkish border to Europe is the Trans-Adriatic pipeline (TAP).

Figure 14. Trans-Anatolian pipeline (TANAP). Source: TANAP web-site.

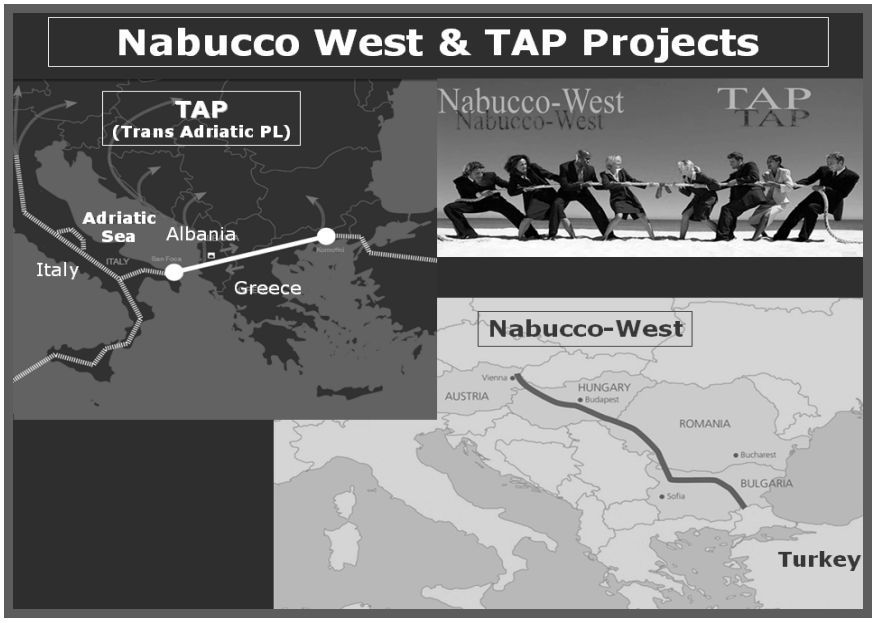


BP, the biggest stakeholder in the BTC and SCP projects, had long advocated the South East European Pipeline (SEEP) project intended for the second phase of the Shah Deniz project. The Azerbaijani side (SOCAR) considered the potential of this project limited and unprofitable from the point of view of its own economic and strategic goals, insisted on the TANAP project and achieved the desired goal.

Then BP started supporting Nabucco-West which was supposed to become a continuation of the TANAP project (28 June 2012).[22] Nabucco-West is a 1,300-km pipeline with a section of 48 inches. It runs from the Turkish-Bulgarian border through Bulgaria, Romania and Hungary and will supply gas to the Austrian gas trading center in Baumgarten. The capacity of Nabucco-West will be 10 bcm with the possibility of increasing it to 23 bcm.

The project of a Trans-Adriatic Pipeline (TAP) has been developed by the Swiss company EGL, Norway's Statoil and German's EoN. According to the project documents, the pipeline will originate in Greece, pass through Macedonia, then under the Adriatic Sea and be linked to the south of Italy. The initial capacity of the pipeline is 10 bcm but it can be increased to 20 bcm. In addition to the shareholders of Shah Deniz, BP and TOTAL, SOCAR has also recently expressed a desire to participate in the financing of this pipeline, and shareholders of the consortium agreed to provide the three companies a 50% share.[23] This has enhanced competition among projects vying for the role of TANAP's continuation in Europe.

Figure 15. Source: Nabucco and TAP web-sites.



[22] BP drops SEEP to back Nabucco West,
http://www.upstreamonline.com/live/article1255837.ece
[23] "BP, Total, Socar to fund TAP gas pipeline",
http://www.oilandgastechnology.net/pipelines/bp-total-socar-fund-tap-gas-pipeline

Conclusion

TANAP project is important not only because it will supply significant volumes of gas but also because it is a guarantor of regional and especially the European energy security. The project will contribute to the strengthening of economic and political security of Azerbaijan. It will also contribute to the Georgian and Turkish economies because these are transit countries and will receive revenue. As in the case with the BTC and SCP, such a source of income is vital for the Georgian economy. And for Turkey it is even more important not because of the modest transit revenue but the fact that the 6 billion cubic meters of gas will help reduce dependence on the Russian gas which was 58% in 2011. Besides, the Azerbaijani gas is relatively cheaper for Turkey than Russian and Iranian.

None of Turkey's main expectations from Nabucco (cheaper gas, high transit fee, the right to re-export the gas and the opportunity to diversify sources by receiving more gas than other project participants) were reflected in the Intergovernmental Agreement signed. One of the main reasons for which TANAP project was preferred to Nabucco is a volume of the gas reaching 6 billion cubic meters and a lower price.

Azerbaijan, for its part, wants a bigger share in the "price chain" from production to transportation, a larger share in the pipeline and direct involvement in gas trade in respective countries. Under the contracts, Azerbaijan has substantially got what it wanted and appears to have obtained the right to sell gas on the territory of Turkey. These are very important achievements for Azerbaijan. The existing distribution of shares in TANAP is as follows: SOCAR has 80% and TPAO and BOTAŞ have a total of 20%. It would not be surprising if SOCAR sells part of its shares to its companions in Shah Deniz and other interested companies.

As we have repeatedly mentioned, it is very important not only for the project to succeed and serve as an example for future projects. It is also crucial that the project takes into account the interests of all parties. If parties to this project (TANAP) continue to treat each other with the same degree of responsibility, it will facilitate the process of integration, provide greater stability in the region and maintain energy security both in this region and on a global scale. We hope that we have learned enough from the events occurring in the energy sector to understand that concern about only one's own interests can not bring major dividends.

ENERGY SECURITY IN CENTRAL AND SOUTHERN EUROPE: TANAP VS. SOUTH STREAM

Mikhail Korchemkin
East European Gas Analysis, USA

SUMMARY

Despite being targeted at the same markets, South Stream and the Trans-Anatolian Pipeline (TANAP) are not competing projects. South Stream is designed to divert the contracted flows of Russian gas from existing routes through Ukraine to the new route across the Black Sea. TANAP will deliver to Turkey and Europe additional volumes from new sources. Cost of gas produced in the Yamal peninsula and delivered to the European Union across Russia and by the South Stream pipelines is a way higher than the cost of gas produced in the Caspian region and delivered by TANAP.

- From the standpoint of European consumers, TANAP has a major advantage – it will diversify the sources of gas supply.
- South Stream is designed to divert the currently contracted volumes from the existing transit routes via Ukraine.
    - According to Gazprom spokesman Sergey Kupriyanov, South Stream and Nord Stream "will reduce Ukraine's importance for transit to zero".
    - Gazprom needs to fill up the Nord Stream and South Stream pipelines.
    - By 2020, there will be no gas left for transit to Europe via Ukraine (Figure 2).

Figure 1. Southern Corridor and South Stream

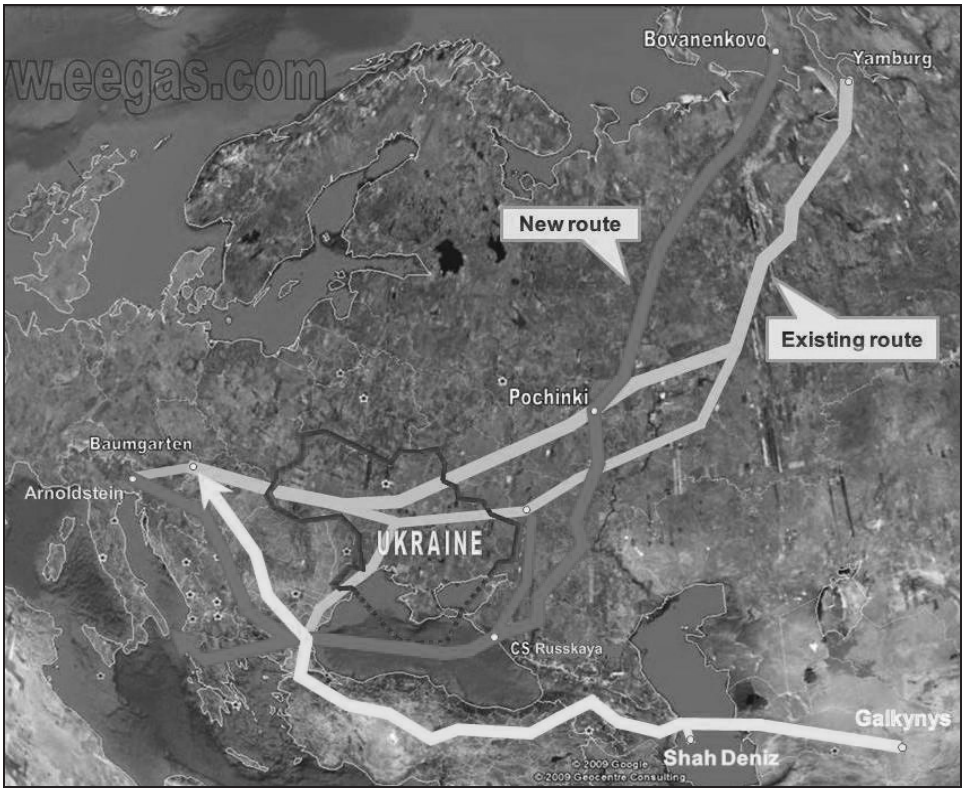
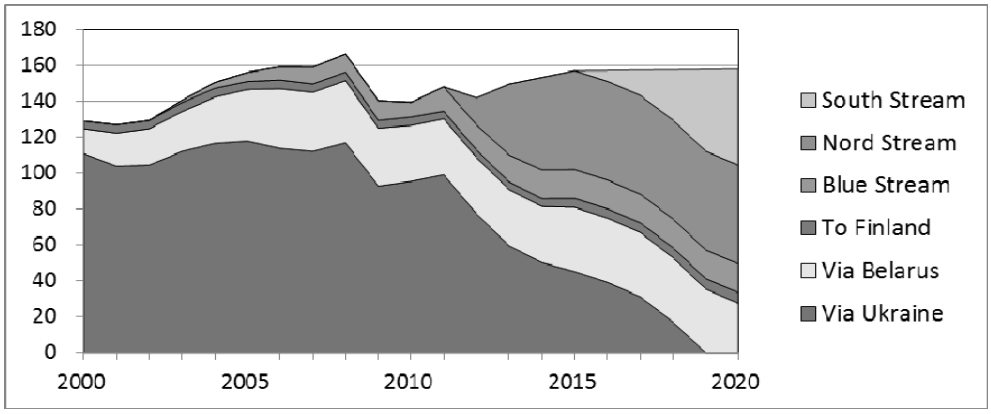


Figure 2. European Exports of Gazprom in 2000-2020, bcma



- Gazprom officially reports the guaranteed contracted volume of 158 bcma for the period of 2020-2025.

- By 2022-2023, the combined European export capacity of Gazprom is to reach 318 bcma or twice the guaranteed contracted volume.

- South Stream pipeline targets gas markets of 14 countries listed in Table 1.
  - South Stream can deliver gas to Turkey via the Malkoclar terminal at the Bulgarian-Turkish border.
  - Note that South Stream can supply Austria if the Trans-Austrian Gas Pipeline (Trans Austria Gasleitung - TAG) is operated in reverse mode.
  - Austria and Slovakia can receive gas via the Nord Stream pipeline.
  - However, Austria is more likely to get gas from TANAP.

Table 1. Russian Gas Exports to Central and Southern Europe, b cm

	2008	2009	2010	2011
Italy	22.3	19.0	13.1	17.1
Austria	5.8	5.4	5.6	5.4
Greece	2.8	2.1	2.1	2.9
Hungary	8.9	7.6	6.9	6.3
Slovakia	6.2	5.4	5.8	5.9
Romania	3.6	2.0	2.3	2.8
Bulgaria	3.5	2.6	2.7	2.8
Serbia + Montenegro	1.5	1.5	1.8	1.4
Croatia	1.1	1.1	1.1	-
Slovenia	0.6	0.5	0.5	0.4
Bosnia & Herzegovina	0.3	0.2	0.2	0.3
Macedonia	0.1	0.1	0.1	0.1
Subtotal:	56.6	47.6	42.1	45.4
Turkey	23.8	20.0	18.0	26.0
- Blue Stream	10.1	9.8	8.1	13.6
- Malkoclar	13.7	10.2	9.9	12.4
Total:	70.3	57.7	52.0	57.8

Source: Gazprom.

- The combined 2011 Russian exports to the market area of South Stream are reported at about 58 bcm or slightly below the design capacity of South Stream – 63 bcma.
    - In the mid-term, incremental growth (if any) of the regional gas imports is more likely to be met by exporters other than Russia (Azerbaijan, LNG).

- Italy, Russia's main partner in and the final destination of the South Stream pipeline, has substantial gas import capacity for a full-scale competition between suppliers.
    - Current capacity of cross-border gas pipelines and LNG terminals (113 bcma – Table 2) is 40% above the import volume of 2011.
    - The capacity-to-import ratio is likely to increase and the Italian market will be more open for gas-to-gas competition.
    - Russian gas is one of the most expensive products in the European gas market.
    - On the European gas price policy, Russian president Vladimir Putin ordered Gazprom not to give in and take a loss in market share.
    - Without serious price discounts, Russian gas is likely to continue losing its market share through 2020.

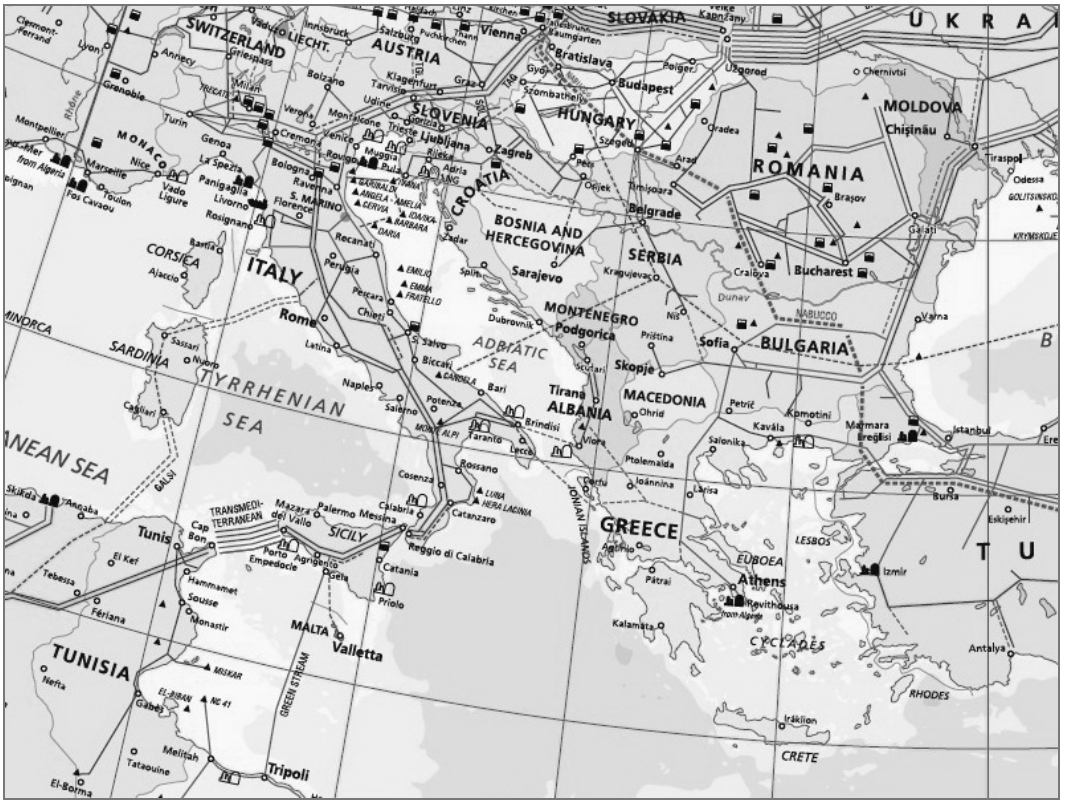
- Italian market is an attractive target for Azerbaijani gas delivered via TANAP and Trans-Adriatic Pipeline.
    - Gas from Turkmenistan may come to Italy in the second stage of TANAP.

Table 2. Italian Gas Import Capacity, bcma

	2010	2025
Pipelines:		
TransMed (Algeria-Italy)	33.5	33.5
Green Stream (Libya-Italy)	11.0	11.0
TAG (Trans Austria Gasleitung)	37.4	37.4
Transitgas (Switzerland-Italy)	19.9	19.9
Subtotal existing pipelines:	101.8	101.8
TAP (Trans Adriatic Pipeline)	-	20.0
TGI (Turkey-Greece-Italy)	-	11.5
Galsi (Algeria-Italy)	-	8.0
South Stream from Slovenia	-	24.0
South Stream from Greece (a)	-	10.0
Subtotal new pipelines:	-	73.5
Total import pipelines:	101.8	175.3
LNG terminals:		
Panigaglia (La Spezia)	3.5	8.0
Adriatic LNG Terminal (Porto Levante)	8.0	8.0
Subtotal existing terminals:	11.5	16.0
Livorno / Toscana (under construction)	-	3.7
Brindisi (under construction)	-	8.0
Taranto	-	8.0
Porto Empedocie	-	8.0
Priolo Augusta	-	8.0
Senigaglia / Ancona	-	5.0
Gioia Tauro	-	12.0
Ravenna - Atlas LNG	-	8.0
Ravenna – Rosignano	-	8.0
Zaule (Trieste)	-	8.0
Alpi Adriatico (Montefalcone/Trieste Offshore)	-	8.0
Subtotal new terminals:	-	84.7
Total LNG terminals:	11.5	100.7
TOTAL IMPORT CAPACITY:	113.3	276.0
Minimum capacity with South Stream (b)		163.5
Import projections (c)		70-94

(a) Estimation; (b) No new projects except South Stream and LNG terminals in Livorno and Brindisi; (c) EU Energy Trends to 2030. Sources: ENI, Edison, OLT, GIE, RBK

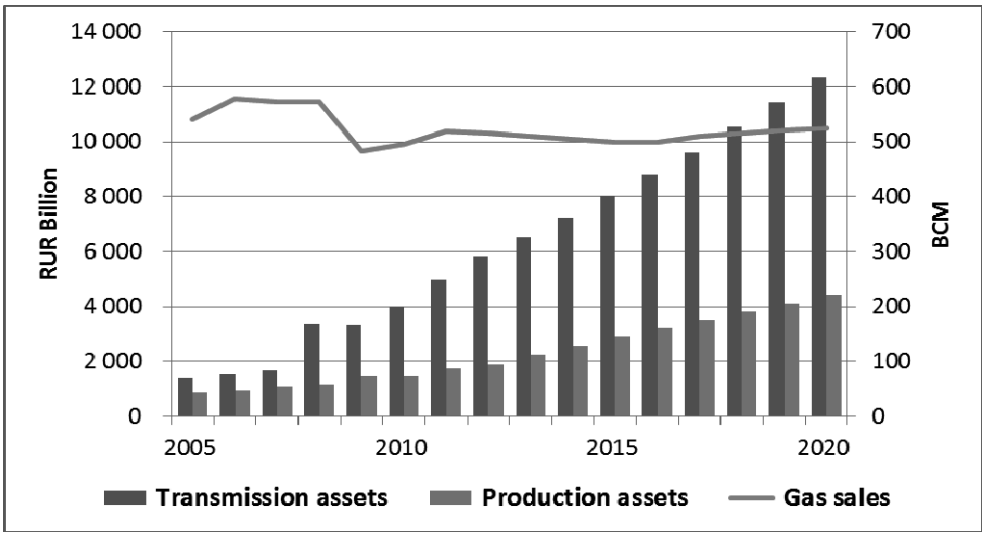
Figure 3. Routes of Gas Supply to Italy



- Reserve base of the Caspian region is bigger than that of Yamal and West Siberia.
- Proved gas reserves of the Russian Yamal Peninsula are reported at about 12 tcm.
- BP reports proved reserves of Azerbaijan and Turkmenistan at about 26 tcm.
    - This is more than the proved reserves of West Siberia, including Yamal.
    - Reserve-to-production ratio of the Caspian region is much higher than that of Russia.
- Shah Deniz gas field is located about 2500 km away from the border of the European Union and 780 km from the border of Turkey.
    - Pipeline route from Shah Deniz to Turkey via Russia and Blue Stream is 900 km longer than the direct route via Georgia.

- Pipeline route from the Bovanenkovo gas field in the Yamal Peninsula to the Black Sea and then via South Stream to the EU is about 4300 km long (Figure 1).
- Gazprom builds the first 1100 km pipeline section from Bovanenkovo at the cost of €12.4 million per 1 km.
    - Total cost of new gas pipelines linking the Yamal Peninsula with the Black Sea is estimated at above €30 billion.
    - The South Stream project is officially estimated at about €16 billion.
    - The total cost of South Stream with feeding pipelines can be well above €46 billion.
- The cost of TANAP with its feeding and downstream pipelines is several times lower than that.
- Huge pipeline construction program reduces the profit margin of Gazprom.
- From 2005 to 2011, the book value of the company's gas transportation assets has increased from RUR 1.4 Trillion to RUR 5.0 Trillion.
    - RUR 1.5 Trillion was added by the reevaluation of assets in 2008.

Figure 4. Growth of Pipeline Assets of Gazprom

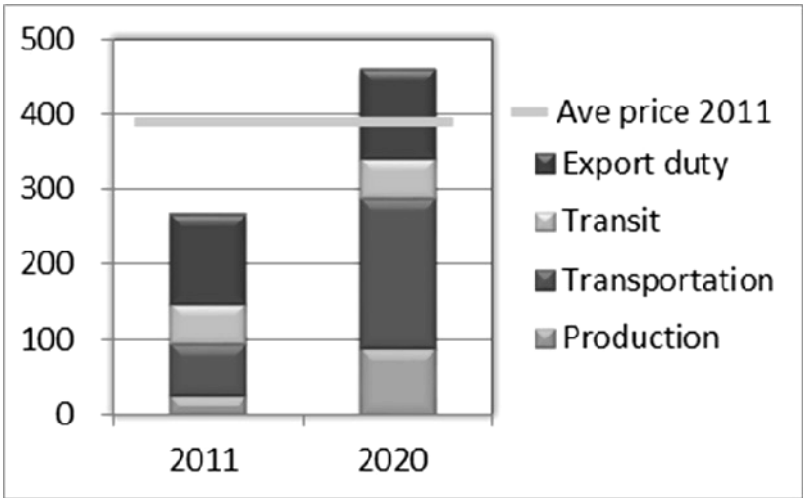


- By 2020 the value of assets of the gas transportation segment is to be nearly ten times higher than in 2005.

- The volume of total gas sales is likely to remain at about the current level.
- Production assets are to show a more reasonable growth rate.

- The extremely fast growth of pipeline assets is to affect the depreciation cost and the overall transportation cost of gas, as well as the profitability of Gazprom.
- Excessive construction will result in a lower load of the existing pipelines.
  - By 2020, the "old" pipelines delivering gas from West Siberian to European Russia and for exports will have over 150 bcma of spare capacity.
  - Spare capacity will be growing every year because of the natural depletion of the main producing fields of West Siberia (Urengoy, Yamburg and other).
  - Lower load factor means higher transportation costs.
- As shown in Figure 5, in 2020 the average cost of gas delivered to Europe is estimated to reach $460/mcm or nearly $13/MMBtu (73% growth from the level of 2011).
  - Major share of the growth will be provided by the gas transportation segment.
  - Production costs will grow because of the development of more expensive fields in remote areas, like Yamal, and the planned increase of severance tax.
  - Russian government may cut the growth by reducing the export duty, though this step would contradict the current law and would hurt the state budget.
  - Note that the cost of gas delivered by South Stream will be higher than average.
  - Figure 5 shows the cost of gas produced in Russia.

Figure 5. Average Cost of Russian Gas Exports to Europe



- High cost of Russian gas delivered to the European consumers will badly affect the competitive capacity of Gazprom.
    - Under medium and low gas price scenarios, exporters of the Caspian region will always be able to offer better price than Gazprom and still make higher profits than the Russian gas monopolist (medium scenario assumes about the current level of price of pipeline gas).
    - By 2020, Gazprom will be unable to compete at its current export price of about $12/MMBtu.

Figure 6. Caspian Gas Route to Ukraine

- Trans-Caspian Pipeline agreement between Azerbaijan, Turkmenistan and the EU would be a major breakthrough in the development of gas links between the Caspian region and Europe.
    - Trans-Caspian Pipeline can initiate TANAP-2.
    - Trans-Balkan Pipeline, that now delivers Russian gas to Romania, Bulgaria and Turkey, will be put out of business by South Stream.
    - Operating in reversal mode, Trans-Balkan Pipeline can deliver Caspian gas to the very attractive market of Ukraine.
- Gas fields of the Caspian region have several advantages over Russian reservoirs of the Yamal Peninsula.
    - Caspian region has a bigger reserve base than Yamal.
    - Caspian gas fields are closer to Europe.
    - Caspian gas has lower production and transmission costs.
    - From investor's standpoint, Shah Deniz and Galkynys gas fields can get a higher netback and a better return on investment.
    - From the standpoint of European consumers, Caspian gas coming by TANAP means a perfect diversification because it is gas from a new source coming by a new route.

AZERBAIJANI GAS AFTER 2020

Ilham Shabanov
Director of the Petroleum Research Center, Azerbaijan

Ladies and gentlemen!

My report is dedicated to the prospects of gas production and the development of the gas industry in Azerbaijan for the period 2020-2025. During the short time allotted to me, I'll try to discuss the possible scenarios of gas production in Azerbaijan, as well as its export options. Also, a number of projections on gas consumption in Azerbaijan's domestic market will be presented for your attention.

With the implementation of the "Stage 1" phase of the Shah Deniz development project at the end of 2006, Azerbaijan launched a new era of expansion in the development of its gas industry.

Table (1). Gas production in Azerbaijan during 2000-2011

Year	Volume, bcm
2000	5,64
2005	5,73
2007	10,83
2008	16,34
2009	16,33
2010	16,67
2011	16,31

As we can see from Table 1, 2007 began a sharp increase in gas production in Azerbaijan. This increase was the result of a twofold increase in gas production in the "Shah Deniz" contract area and a transfer of associated gas to Azerbaijan in the development of "Azeri-Chirag-Guneshli" offshore fields by BP-Azerbaijan. At the same time, the "Large-scale development of the ACG" project began operating at full power, and all five production platforms began production. It is for this reason that the volume of gas transferred to Azerbaijan for free was increased during this period.

Table (2). Gas production within the framework of the "Stage-1" of "Shah Deniz" development

Year	Volume, bcm
2007	3,31
2008	7,1
2009	6,2
2010	6,89
2011	6,67

There is reason to believe that the gas trade volume in Azerbaijan will not change until 2018, that is, prior to the launch of the "Stage-2" “Shah Deniz" development project. This means that 16-17 bcm of gas will continue to be produced every year. Within the development of "Azeri-Chirag-Guneshli" field, volumes of associated gas transferred to Azerbaijan will decrease starting from 2015, because in order to maintain bedded pressure, the ACG operator will need to pump more and more gas into oil wells. Nevertheless, the decrease in “Azeri-Chirag-Guneshli” gas has a good chance of being compensated by increased production by BP-Azerbaijan within "Stage 1" of the Shah Deniz field. As we can see from Table 2, only in 2008 did production within "Stage 1" pass 7 billion cubic meters. Although platform aggregates are capable of increasing production from "Shah-Deniz-1" to 9 bcm, lack of market including decreasing deliveries to Turkey make such production increases unprofitable.

Table (3). Volume of gas transportation via SCP (Baku-Tbilisi-Erzurum).

Month	Year 2011, million cubic meters	Year 2012, million cubic meters
January	336,5	434,7
February	423,9	427,9
March	539,6	437,4
April	500	300,0
May	300	200,0
June	300	400,0
July	300	300,0
Total	2700,0	2500,0

We should note that in 2011, via this very pipeline which supplies gas only from "Shah Deniz" field, there were 4.5 bcm of natural gas sold abroad, which is 400 million cubic meters less than in 2010.

Table 4 presents the projections for natural gas production in 2025.

Table 4. Forecast of annual natural gas production by 2025

Ongoing projects	Production volume (bcm)
Project “Stage-1” Shah Deniz	8-9
Project “Stage-2” Shah Deniz	16
Deep gas Azeri Chirag Guneshli	5-6
Absheron	9-10
Umid / Babek	7-8
SOCAR	5
Total	50-55

According to forecasts, domestic consumption of natural gas in Azerbaijan will be at least 15-16 bcm per year by 2020, and possibly as high as 20 bcm. However, I believe the lower estimate is more probable.

After the liquidation of "Azerigaz" JSC and its merging with SOCAR, 9.89 bcm of gas were sold within the domestic market in 2010. However, according to data based on all consumer groups, the volume of used gas used was only 6.99 bcm. 2 bcm in technical losses were incurred in 2010. In 2011, the level of technical losses was reduced by more than 300 million cubic meters.

On October 28, 2011, "Azerigaz" (as part of SOCAR) and E.ON Ruhrgas AG signed an agreement to develop a project for the improvement of the gas supply system in Baku and the Absheron peninsula. According to this agreement, the German company was tasked to develop measures to minimize gas loss while considering a long-term industry development, population growth and demand for natural gas, as well as the expansion of the existing gas distribution network. On August 31 E.ON Ruhrgas AG presented to the State Oil Company, which plans to bring the Baku and Absheron gas distribution system (which accounts for about 60% of total gas consumption in Azerbaijan) to European levels within two years.

According to SOCAR, it is planned to fully transition the entire country to an automated system of gas distribution and completely equip all subscribers with smart card counters by the year 2015. This will result in both the reduction of technical losses and a decrease of gas consumption by subscribers. Thus, it is likely that in 10 years, gas consumption in the country will not exceed 12.5-13 bcm per year. We should consider that by the year 2020, Azerbaijan plans to invest up to 625 million Euros into the development of alternative energy. The largest share of these investments will be directed into the development of mining and hydro and wind energy. An increase in alternative energy will likely create a further reduction in natural gas consumption for electricity generation.

Thus, by the years 2020-2025, there will be between 50 and 55 bcm of gas produced in Azerbaijan and there’s reason to expect that Azerbaijan will

have 37-42 bcm remaining for export. Where will Azerbaijan send this volume of gas?

The main direction of Azerbaijani gas exports is currently to the "West." SOCAR's expert group and key partners in Shah Deniz (BP, Statoil and Total) have been negotiating on this matter since 2008. Azerbaijan plans to build a new TANAP pipeline in Turkey with a diameter of 56 inches and in the future it will be possible to send not only gas volumes of "Stage 2", but also the growing export volumes of other Azerbaijani gas. The new pipeline will run parallel to South Caucasus Pipeline in Azerbaijan and will be key to plans of consistently exporting 32 bcm of gas in the future. By 2020, Azerbaijan will fully upgrade its own Hajigabul-Gazakh-Gardabani pipeline, by which SOCAR supplies gas to Georgia. It is likely that it is in Azerbaijan's plans to take a leading position in the Georgian gas market, thus pushing out "Russian gas", which, by that time, will equal around 2.5 bcm. The remaining volume can be exported to Russia and trading gas trading with Iran is also not excluded.

AZERBAIJAN IN THE CONTEXT OF THE EU ENERGY MATRIX: ESTABLISHED OIL PRODUCER AND EMERGING GAS POWERSHOUSE

Teymur Huseynov
Head of Global Energy Consulting at Exclusive Analysis, UK

Europe is a continent in need of increasing volumes of external energy supplies that has been driven by the fall in indigenous production in the last few decades. Moreover, the share of natural gas in European energy balance has increased from under 10% in 1990 to above 20% in 2010. This trend is very likely to continue in the next decade and could be significantly affected by the decreasing nuclear power usage in major European economies like Germany. Dependent on a few major suppliers for most of its natural gas consumption European Union has been keen to diversify its supply inlets further and to reach greater energy efficiency in recent times. One of the key catalysts for the momentum behind greater diversification has been the increasingly frequent disruptions of Russian gas supplies to European customers due to former's disputes with its major transit partners, Ukraine and Belarus. It was in the context of this increasing concern about European energy security and updated reserve estimates of Caspian states such as Azerbaijan that led to more emphasis on the development of the Southern Energy Corridor, one of the most viable alternative supply routes to Europe. Russia, for its part, has seen such efforts at diversification as well as the European Commission's current anti-trust investigations into Gazprom's commercial activities in a number of Central and East European countries as part of a geopolitical grand strategy to decrease its role in European energy markets. State-run Gazprom, which today accounts for about 27% of European gas imports, has invested significant energy and resources to make itself more indispensable for European energy calculus by increasing its presence in the European downstream markets as well as devising a more flexible export pricing policy. It is against this background that we shall try to analyse the potential for Azerbaijan and other Caspian states to make a meaningful contribution to European gas balance through greenfield projects such as TANAP.

Key factors that will inform and challenge Azerbaijan's current gas export strategy in the short to medium term are as follows:

While the consensus expectation among the global energy organisations (including the International Energy Agency) is that global gas demand will keep on rising in the coming years despite the base-case scenario of demand depression in Europe at least until 2015. Moreover, EU gas demand in 2011 fell by almost 11% to 471 bcm and Europe is nowhere near coming out of this recession. Last year signified the largest year-on-year drop in gas demand in Europe with 2012 expected to lead to further 1% drop. In contrast, we are likely to continue to have 1.5-2% global demand growth for natural gas (about 60 bcm) and the competition among suppliers to have as much share of these volumes as possible will only increase. Thus new entrants into the European gas markets need to consider the harsh reality of a continent which is undergoing a severe financial and economic turbulence that illustrates itself in serious reduction in gas demand since the 2008 crisis.

International consortia developing offshore Azeri gas fields also need to be ready for price competition. Prices in the gas-rich US market are at historical lows of $3 per MBTU. Under the scenario whereby gas consumption in the US domestic market rises further one could see the prices at the Henry Hub rise to $4. If you then factor in the cost of liquefaction and potential export of US LNG to the European market one will likely need a price of at least $6-7. Current European price is $8-9 which underlines the fact that the American gas can indeed become a very competitive offering in Europe. Natural gas to be supplied by Azerbaijan has to be competitive in this context and it will continue to compete with cheaper volumes from Turkmenistan, Kazakhstan and Uzbekistan in the Caspian basin (through Russia) as well as much larger volumes from major suppliers such as Russia, Norway, Qatar and Algeria. Furthermore, there are potential suppliers along the line such as the Kurdish region of Iraq (KRG).

Long-term pricing is likely to continue to dominate the market for the foreseeable future with neither major suppliers nor key buyers ready to opt out of this stable contractual mechanism. However, when it comes to prices spot is likely to stay more competitive over long-term as has been the case since 2009. The latter argument assumes that Europe will see additional LNG cargoes in the coming years, primarily from the United States. Price differentials between spot and term contracts are set to increase further in case of supplies from the US. Indeed, at the height of the 2008/09 global financial crisis and economic slowdown volumes of

LNG imports by European countries increased by 18% to 70 bcm despite an overall fall of 7.4% in European gas demand (to 555 bcm) in the same year.

There is the further factor of Kremlin-lobbied South Stream (63 bcm capacity) and the critical question of "what if it gets built first?" While Gazprom's recently concluded Nord Stream pipeline (55 bcm capacity) brings gas from Russia directly to northern European markets, South Stream is designed to take Russian gas across the Black Sea into central Europe and Balkans and to start commercial supplies in late 2015. It therefore presents the most challenging competition to TANAP and to the concept of the Southern Gas Corridor thus far. It is no secret that both TANAP and the South Stream target the same geographical area that the proponents of the Caspian exports have had in mind since the initial development of the alternative supply strategy. While Gazprom's new export projects are highly capital intensive the fact that they are gradually becoming a reality shows both the company's and importantly the Russian political leadership's resolve to reduce dependence on key transit countries such as Ukraine and Belarus that are to this day unable to overcome their financial difficulties.

Shah Deniz consortium operating the giant gas field in Azerbaijan (1.2 tcm of reserves) will make its decision regarding the Nabucco West/TAP in May 2013 and the laying of TANAP is planned to be started in late 2013 in order to start exports in 2017. This implies, that according to current plans South Stream has the lead in terms of construction deadline. 2017 is when the international consortium at Shah Deniz will start commercial production from Phase-2 estimated at 16 bcm annually. 6 bcm out of this is planned to be left in Turkey and 10 bcm is slated for Europe. It is estimated that production from Shah Deniz may increase to 24 bcm at the later stage of Phase-2. Dynamics of internal gas consumption in Azerbaijan and Turkey driven by additional power generation capacity, development of the petrochemicals sector and further industrial projects as well as expanding populations in both countries will nevertheless need to be factored into the future calculations of volumes available for export from Shah Deniz.

Under the scenario that Iran does not see any serious systemic changes and remains unable to officially take its gas to the European markets (apart from Turkey and Armenia) Turkmenistan's potential role becomes even more important in order for the Southern Gas Corridor to become a project that is able to offer serious volumes of natural gas to Europe.

Turkmenistan: Potential game-changer

The numbers for proven and probable natural gas reserves in this country speak for themselves. In October 2011 independent auditor Gaffney, Cline & Associates updated gas reserves in Turkmenistan's giant onshore South Yolotan-Yashlar fields to 13-21 trillion cm from a 2008 estimate of 4-14 trillion cm. The field, which has recently been renamed Revival, is considered to be second to only Iran's South Pars. The field is the main source for future larger supply volumes from Turkmenistan to China and potentially Afghnistan, Pakistan and India. Importantly, the reserves update once again proves the point that Turkmenistan has sufficient capacity to meet gas demand in many directions.

Following the 2009 crash for natural gas demand in Europe and the consequent unwillingness of Gazprom to offtake Turkmen gas has led to rather acrimonious disputes between the Turkmen president and the then Russian President Dmitry Medvedev and Gazprom CEO Alexei Miller. April 2009 explosion at Turkmenistan-Russia (Central Asia-Centre) gas pipeline preceded this and has led to virtual stoppage of Russian gas imports from Turkmenistan for the rest of 2009. Previously Russia imported between 40-45 bcm of Turkmen gas for and sold in further to Ukrainian and European customers. Russia picked up its offtake from Turkmenistan in 2010 but current volumes (10-12 bcm) are much lower compared to what Turkmenistan sold to Russia previously. In essence, this was a breach of 2003 contract between Turkmenistan and Russia whereby the latter agreed to an import of at least 40 bcm of natural gas annually.

Chinese entry into the Turkmen market in 2007 (Bagtiyarlyk PSA with CNPC) and the start of Turkmen gas exports to China through Central Asia-China gas pipeline in December 2009 was the critical development that saved the Turkmen state from experiencing serious cash flow problems. But it was also the start of a new trend whereby ever increasing volumes of Turkmen gas are set to go in the eastern direction. So far China has imported 30 bcm of Turkmen gas (15.5 bcm in 2011) and plans to increase this to above 24 bcm in 2012 and then to record 65 bcm starting from 2015. That volume would represent the largest volume of independent Turkmen gas exports to a single customer in any given year and would almost equal half of China's current gas consumption. While diversion of Turkmen natural gas into eastern markets is something not entirely opposed by Russia it also signifies the risk to the Southern Energy Corridor.

Yet, Turkmen President Berdymukhammedov has made it clear in 2011 that he was keen for his country to become a part of the Southern Gas Corridor. One of

the key indicators in this regard is the importance given to the ongoing construction of the East-West pipeline in Turkmenistan which would carry natural gas from major eastern fields to the country's Caspian offshore. Furthermore, Turkmenistan currently has available volumes of natural gas from its offshore fields in the Caspian that it can deliver to Europe. Production from the Turkmen shelf is likely to increase further in the coming years. This gas can then either be turned into CNG/LNG and delivered to Azeri export network by tankers or directly connected to Azeri gas export pipelines via an underwater pipeline (Trans-Caspian pipeline). However, under a scenario whereby Turkmenistan and Azerbaijan fail to resolve their maritime border disputes the chances for Turkmen-Azeri cooperation on gas supplies to Europe would suffer. Such development would significantly undermine Turkmenistan's efforts to diversify its gas exports and reach the lucrative European market and would be a serious blow to the full potential of the Southern Gas Corridor.

IMPORTANCE OF AZERBAIJAN-TURKEY COLLABORATION IN TERMS OF TURKEY'S ENERGY SECTOR. TANAP PROJECT

Kenan Yavuz
President/CEO of SOCAR Türkiye

Azerbaijan & Turkey Strategic Projects in Energy Sector

Turkey and Azerbaijan have many strategic corporations planned and realized up to now

- Baku-Tiflis-Ceyhan Crude Oil Pipeline (BTC)
- Şahdeniz Natural Gas Pipeline Project
- PETKİM Project
- STAR Refinery Project
- Şahdeniz-II Project
- TANAP Project

Petkim Privatization is a Strategic Issue

- Petkim, serves as a bridge connecting Azerbaijan and Turkey economically.
- By this Privatization Azerbaijan became active foreign investor in Turkey
- By STAR Refinery project, Azerbaijan became the biggest first hand foreign investor in Turkey.

Turkey and Azerbaijan carried their historic and cultural relationship to economic collaboration.

Turkey-Azerbaijan Strategic Collaboration

- Turkey-Azerbaijan strategic collaboration made Turkey and Azerbaijan important players in the world energy market.
- The direct investment of Azerbaijan to Turkey will reach to approximately 17 Billion USD by TANAP Project in 2018.

SOCAR

Energy Projects between Azerbaijan & Turkey

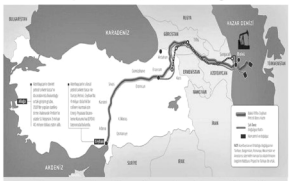
Baku-Tbilisi-Ceyhan oil pipeline (BTC)

50 million ton/year capacity, nearly 1768 km long.

Turkey & Azerbaijan are interrelated with each other by a very important project – Baku-Tbilisi-Ceyhan oil pipeline which transfers Caspian oil especially from Azerbaijan to world markets.

South Caucasus Natural Gas Pipeline (SCP)

Pipeline is 690 km long.



- The projects aims to transfer the natural gas produced in the area Şahdeniz to Turkey-Georgia border.
- Main objective of the second part of the project is transfer of this natural gas to Europe from Turkey.

SHAH DENİZ 2 Project

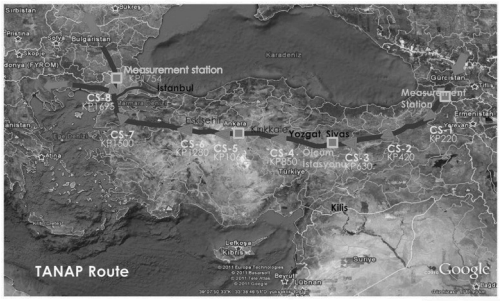
- Azerbaijan gas will be transferred from Shah Deniz 2 field to Turkey and Europe.
- This project will enable Azerbaijan and Turkey to become stronger than ever.

Energy Projects between Azerbaijan & Turkey
Trans-Anatolian Natural Gas Pipeline (TANAP)Project

TANAP Project

- The Trans-Anatolia Natural Gas pipeline (TANAP) will have an initial capacity of 16 billion cubic meters per year and cross 2,000 kilometers.
- 6 Billion cubic meters of gas will be sold to Turkey
- The first delivery of gas is planned for 2018.
- The share of Turkey through BOTAŞ and TPAO are 20% and the share of SOCAR is 80%.
- 7 billion $ investment

Trans-Anatolian Natural Gas Pipeline (TANAP)Project



- The entry point of the 56 inch pipeline will be Türkgözü at the Turkish border.
- The exit points to Europe will be at the border of Greece and/or Bulgaria
- The exit points to Turkey will be at Eskisehir and the Thracian region.

Four phases of the project envisaged:

- The first gas transfer in 2018
- 16 billion cubic meters in 2020
- 23 billion cubic meters in 2023
- 31 billion cubic meters in 2026

FLAGS OF TWO STATES,
THE SOURCE OF WORLD ENERGY

Trans-Anatolian Natural Gas Pipeline (TANAP)Project

Benefits of TANAP Project

- TANAP will bring Turkey's and EU Countries gas demand with Azerbaijan's additional sources.
- Azerbaijan will have a chance to transport Shah Deniz-II and her other natural gas sources to Turkey and EU Countries.
- There is an alternative route for the transmission of Turkmen gas to Turkey and EU Countries
- Azeri gas supplied to the western side of Turkey's national transmission line and western region supply security will be reinforced.
- NATURAL GAS DIVERSITY OF TURKEY AND EU COUNTRIES WILL BE PROVIDED
  - Natural gas supply with reasonable price and quantity
  - Opportunity for additional 31 billion cubic meters natural gas

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By TANAP Project the amount and variety of natural gas resources for Turkey will be increased

Trans-Anatolian Natural Gas Pipeline (TANAP)Project

TANAP Project is strategically important, because…..

With the TANAP Project;

- **Turkey and Azerbaijan will give great support for world peace and stability**
- **The political stability in the region will be provided**
- **The strategical partnership of Turkey and Azerbaijan is to develop a brand new identity**
- **The global status of Azerbaijan and Turkey in the most strategic geography of the world is improved to a measure that is incomparable with today's conditions**
- **Azerbaijan will be the biggest foreign direct investor in Turkey**
- **The dependency on Russia and Iran gas will decrease**
- **Turkey's energy security will enhanced by diversifying its suppliers,**
- **Turkey turn into an energy hub, providing a transit route for energy to the European markets**
- **Turkey needs to diversify its energy sources for sustainable development and to be strong in terms of energy for 2023 vision**

AZERBAIJAN AND TURKEY LEADS THE TANAP PROJECT

SOCAR

CHAPTER 2

TANAP: Political challenges for the region

POLITICAL RISKS FOR THE REGION WITHIN THE CONTEXT OF TRANS-ANATOLIAN PROJECT

Dr. Musabayov Rasim
Member of Parliament, Azerbaijan

Since independence, Azerbaijan has become not only a major oil exporter, but has also become a prominent producer of natural gas. In 2011, gas production reached 26 billion cubic meters. Currently only about eight billion of this amount is being exported. However, by 2020 gas exports are expected to increase up to 30 billion, and by 2025, they could reach 50 billion cubic meters. These plans, of course, depend on Azerbaijan's ability to put the necessary pipelines and other infrastructure in place.

Works to expand the capacity of the "Baku-Erzurum" gas pipeline have already begun. In December 2011, Azerbaijan and Turkey signed a memorandum of mutual understanding to build a Trans-Anatolian gas pipeline (TANAP) in order to bring gas to the EU. Its minimum capacity is expected to be 16 bcm per year, with prospects of doubling in the future.

Projects of such a scale must take into account not only economic efficiency and technical difficulties, but also political risks. In this particular case, plans to deliver large volumes of Caspian gas to the European market, supported by the European Union and United States, Azerbaijan, Georgia and Turkey, have sparked poorly concealed ill feelings from Russia, Iran and Armenia. These three states are the main sources of political risk for the region and TAGP project.

Russia's position on the transportation of Caspian gas that bypasses its territory is predetermined by both economic and geopolitical factors. Russian "Gazprom" is extremely jealous of the EU and U.S. efforts to diversify gas supplies to the European and Turkish markets. The current monopolistic position of "Gazprom" allows it to set and maintain high prices for natural gas and has created a situation where many European countries are over-dependent on "Gazprom"

supplies, and thus politically vulnerable in their relations with Moscow. Russian politicians have attempted to use this situation to aid in the recovery of Russia's dominant position, this time not as a Communist empire, but as an energy superpower.

Energy, transport, and communication projects, which are implemented by Azerbaijan with the support of Western companies along with Georgia and Turkey strengthens their economic and political relations. These ties reduce Moscow's opportunity to use financial and energy blackmail in the region, reducing its overall influence. Moscow is increasingly worried that the existing (and planned) South Caucasus oil and gas pipelines will be supplemented by a trans-Caspian pipeline that will open the energy resources of Central Asia to European markets, bypassing Russia.

Iran is another country that increases the political risks for the Trans-Anatolian pipeline, and the entire energy infrastructure of South Caucasus. The country's Islamic regime has been isolated by international sanctions as a result of international concerns over its nuclear program. This restricts Tehran's access to western investment and technologies and as a result, Iran's huge gas reserves are not developed and its access to the profitable European markets is curtailed. Despite the fact that Iran's NICO holds a 10 percent share in Azerbaijan's "Shah Deniz" gas consortium, it has already been announced that due to existing international sanctions, the company's share will be not pumped to Europe through the Trans-Anatolian pipeline. NICO can transport "Shah Deniz" gas to Iran, or at best, to Turkey. Certainly each of these scenarios do not reflect Tehran's vision of how Caspian energy should be delivered to Europe via Turkey.

However, the main risks for these projects are related to possible air strikes on Iran's nuclear infrastructure and direct military confrontation between Iran and Israel, the U.S. and its Western allies. Tehran has explicitly stated that in case of a military strike on its nuclear program it will not only retaliate against the U.S. and Israel, but also against the energy infrastructure of neighboring countries. Oil and gas platforms in the Caspian Sea and also pipelines, including the projected TAGP, are within the range of Iran's missiles. In order to neutralize this threat, Azerbaijan and Turkey are taking steps to strengthen their missile defense systems. An increase of these military efforts and coordination in this area between Turkey, Georgia and Azerbaijan is fully justified.

A third, though not independent source of risk is Armenia. This country, as a result of its own policy of hostility and territorial claims against its neighbors, has been shut out of large-scale regional projects. Completion and modernization of the "Baku-Tbilisi-Kars" railway and the realization of the Trans-Anatolian pipeline leaves Armenia a regional "dead end" and eliminates even a possible future share in the transit "pie." Therefore, it is motivated not by a desire to find a rational formula to be included in regional energy projects, but by fears and envy. The implemented energy projects increase the economic power and geopolitical weight of its "historic" enemies Azerbaijan and Turkey, thus raising concerns in Armenia. Armenia's military and politicians have openly threatened missile strikes on and sabotage of Azerbaijani energy facilities in case of renewed military conflict in Karabakh. However, Armenia cannot take such steps on their own, though they don't hide their readiness to join plans of Russia and Iran in this trend.

The worst scenario is a combination of the three threats discussed above. President Vladimir Putin's regime is losing its popularity in Russia and is increasingly pandering to imperial and nationalist groups, many of which dream of restoring Russia's dominant position in the post-Soviet space. There is a real threat that the Putin regime will not resist the temptation to take advantage of the West's military operation against Iran's nuclear infrastructure as a pretext to establish military and political control over the South Caucasus.

Last December, retired Lieutenant-General and long-time deputy commander of the Russian Transcaucasia Group,Yuri Netkachev, stated that in case of a full-scale U.S.-Iran war, Russia will seek reliable ways to supply its base in Armenia through Georgia. In this situation, Russia will have to break the Georgian transport blockade by force and "provide transportation corridors leading to Armenia through military means." ("IA Regnum" 15.12.2011).

During his recent visit to Ukraine, Georgian Foreign Minister Grigol Vashadze gave an interview to the "The Mirror of the week Ukraine" newspaper in which he warned that Russia would use a favorable opportunity to carry out new aggressions not only against Georgia, but against the two other Transcaucasia states as well. "The reason for this policy is that the Kremlin is trying to restore the Soviet Union. This is a declared policy, a task assigned to various Russian agencies. Any military-political complication in the region – Karabakh, Iran... etc, can serve as a pretext for military aggression" - said the Georgian Foreign Ministry head ("IA Regnum" 06/23/2012 www.regnum.ru/news/polit/1544649.html).

“Novaya Gazeta” military observer Pavel Felgenhauer stated that Russia does not have the resources to provide real assistance to Syria due to remoteness of the theater of war from the Russian border. In these circumstances, the regime will need a small victorious war to humiliate the West and compensate for its image losses in Syria.

"Apparently, someone thinks that in one quick blow, Georgia can be free of American influence and will stop seeking NATO membership. Armenia will be tied stronger, and Azerbaijan is not going anywhere. However, gas and oil pipelines leading from the Caspian basin will be under solid control, and Russian peacekeepers will enter Karabakh, creating a new status quo. The personal power regime will be centered in Moscow, and let the U.S. and its allies be engaged in Syria and Iran.” The author does not just state assumptions. He presents concrete facts of Russian military forces strengthening on the borders with Georgia and Azerbaijan.

"Since December (of last year), there has been an increasing flow of official reports detailing a hectic rearmament of air force and army troops in the southern military district of the North Caucasus. Forces equipped with modern communication equipment and armored vehicles (T-90A and T-72BM tanks, BMP-3 and BTR-82A) are at 65-70 percent, with aviation nearly at 100 percent, while the in average Russian Federation Armed Forces units modern technology is now at 16 percent. The mobile anti-ship missile system "Bal-E" (range of 120 km) has been deployed on the Caspian Sea coast of Dagestan, along with a set of "Bastion" with supersonic anti-ship missile "Yakhont" (range of 300 km) on the Black Sea coast of the Caucasus ("Novaya Gazeta" June 20, 2012,

http://www.novayagazeta.ru/politics/53141.html).

Someone named Mikhail Alexandrov goes even further with a provocative article published in the Noah’s Ark, a newspaper belonging to the Armenian diaspora in Moscow (“Noah’s Ark” dated January 2012). In the article titled "The American attack on Iran, Russia's response and role of Armenia," he suggests (actually incites) that Moscow will have to make a decision to send troops to Azerbaijan in a repeat of the June 1940 occupation of the Baltic states. The author believes that Azerbaijan can be bullied and forced to obey certain threats. In case Baku refuses to cooperate, Russia has the option to initiate a conflict between Azerbaijan and Armenia in Karabakh in order to use the mechanism of the Yerevan and Moscow alliance.

Additional threats to the Trans-Anatolian gas pipeline arise from PKK fighters (the so-called Kurdistan Workers' Party), who have organized terrorist attacks not only on military and police posts and civilian objects, but also organized a number of explosions at pipelines and compressor stations in Turkey. Activism of radical Kurdish groups has increased dramatically in connection with the situation in Syria, and will not be neutralized in the near future. Any TAGP security provision must account for the activities of the PKK.

As we can see, there are plenty of political risks for the delivery of Caspian energy resources to European markets. Within the context of TAGP project, it is important not only to realistically assess these risks, but also to ensure close cooperation between all countries involved in the process: the oil and gas producers (especially Azerbaijan, and in the long term Turkmenistan and Kazakhstan), transit countries (Georgia and Turkey) and consumers (the EU states).

It is important to make the existing pipeline safety and transportation agreements between Azerbaijan, Georgia and Turkey more effective and build close cooperation with the U.S.

1. In accordance with the new NATO concept accepted in the Lisbon Summit, in which the energy communications security provision was designated as one of the priorities of the Euro-Atlantic Alliance, it is important to send a clear message to Moscow and Iran that military pressure on South Caucasus states, and any threat to oil and gas platforms, pipelines and terminals is unacceptable and will be met with adequate response.

2. In order to divide risks and increase the interest of Western powers, it is appropriate to offer Azerbaijan's 80 percent share to attract the big energy corporations operating in Caspian Basin.

3. It is important to encourage the European Union to officially declare its vital interest and full support for the smooth functioning of the Southern energy corridor, a part of which is the planned TAGP gas pipeline.

All noted measures are already being implemented to some extent. The neutralization of political risks for existing and planned pipelines, as well as for all energy infrastructure, will be determined by the results of intensive actions carried out during last decade on accelerating economic growth, modernization, the strengthening of the armed forces and the raising of Azerbaijan, Georgia and Turkey's international prestige.

TANAP: OPPORTUNITIES, OBSTACLES AND CHANGES IN THE REGION

Sinan Oğan
Member of Parliament, Turkey

Relationships between Turkey and Azerbaijan are based on deep historical roots. The current socio-economic relationship between the two countries, Azerbaijan's energy potential, and Turkey's geo-strategic position provide important opportunities for both countries. The planned Trans-Anatolian Pipeline project (TANAP) will play an important role in the delivery of Azerbaijani gas supplies to Turkey and to other countries and will become a new source of opportunities.

The TANAP project will produce 16 bcm of gas from the Shah-Deniz field (beginning in 2015), six of which will be used by Turkey, with the remaining 10 bcm continuing to the European market. The pipeline will enter Turkey through the Turkgozyu village of Posof district in Ardahan province. –The TANAP intergovernmental protocol was signed on December 26, 2011 and provides for an 80% share from the Shah Deniz-II field for Azerbaijan's State Oil Company (SOCAR) and 20% for the Turkish National Oil Company TPAO).

One of the most important aspects of the TANAP project is the size of investment. The total investments in the Petkim/Star and TANAP projects are expected to be approximately $17 billion, making them the largest foreign investment in Turkey. The TANAP project also enhances Azerbaijan's role as a regional energy hub and helps lessen Turkey's traditional dependence on Russian and Iranian energy. The ever-decreasing likelihood of the NABUCCO project along with new gas supply problems related to the events in the Arab world, make the TANAP project even more important as well as promising.

Turkey's role as a gas transit alternative to Russia, was an important part of the NABUCCO project, which foresaw the delivery of natural gas from the Caspian basin and the Middle East to southern Europe. Despite the fact that the European Union placed high importance on the transit of natural gas through Turkey as an alternative to Russian supplies, NABUCCO ran into problems with gas sources

as well the failure of the EU to take a clear position. The duality of the EU's position was revealed when a number of its members signed intergovernmental agreements with Russia on the South Stream project. The South Stream project plans to split the gas pipeline which currently stretches from Russia to Bulgaria into two routes: one via Greece to Italy and the other through Serbia to Hungary and then to Austria. The possibility of NABUCCO significantly decreased after Turkey threw its support behind the South Stream project. However, Turkey signed up for the TANAP project after supporting the South Stream project, possibly creating a number of future challenges.

The Arab Spring's Hidden Impact: Energy Security

The string of national revolutions across North Africa and the Middle East began with an act of self-immolation in Tunisia by a university-educated street vendor. The Arab Spring followed a "domino effect" from Tunisia to Egypt, Libya, and from there to Syria. The Arab Spring process, carried out under the slogans of free speech, democracy, fight against corruption and political degradation, were also impacted by the energy sources management behind it. The Arab Spring sometimes involved international organizations such as NATO and resulted not only in regime change, but also in changes in the management and delivery of energy resources. Especially in the Arabian Peninsula, national movements initiated by local populations pursuing the improvement of living conditions were often accompanied by U.S. attempts to use them as a tool to solve energy security problems.

On the other hand, Iran, fearing that national unrest can spill into its territory from Syria, has taken a policy stance absolutely opposite to that of Turkey regarding Syria. The support that Iran provides to Syrian President Bashar al-Asad caused some "irregularities" in Iranian-Turkish relations, especially because Turkey's position is the same as that of the U.S. and EU. Because Iran is Turkey's second largest gas supplier, providing 15% of its gas, Iran can use this gas dependence as a trump card.

As a result of the West's embargo against Iran and Iran's threats to close the Strait of Hormuz, the winds of the Arab Spring already seem to be blowing from the Strait to the Suez Canal, affecting the stability of gas supplies in the process. Armed conflicts and increased tensions increase are causing complications in the oil and gas supply to the West. BP's chief economist Christof Ruhl said that the

amount of losses incurred due to underproduction are the equivalent of 72 million tons of oil, or more than 11% of oil consumed in the EU.

Needs for changes in energy policy have been occurring in countries like Libya, whose energy resources have become more attractive to the West .. In other words, countries in which processes of the power elite actively proceeded, have indicated their desire to change the existing distribution scheme for energy resources, and thus multinational companies have begun to compete for a bigger piece of the pie.

New goal of terror: Pipelines

We have already noted that instability which begun with the Arab Spring has only increased the value of the TANAP project. Instability in the region as a result of the Arab Spring is dangerous for Turkey because terrorist groups are trying to turn this situation to their advantage and disrupt stability. Analyzing the recent PKK pipeline attacks in light of the Asad regime's support for the anti-Turkish activities of the group, it is clear that terrorist groups in the region are a real threat to TANAP project.

Another threat to TANAP is the anti-Turkish policy of Armenia, which continues to occupy Azerbaijan's region of Nagorno Karabakh. The Armenian terrorist organization ASALA has threatened Azerbaijani diplomats after the return and amnesty of Ramil Safarov, the Azerbaijani officer who killed an Armenian officer in Hungary (after being provoked).

In addition, small skirmishes continue to erupt on the disputed border between Armenia and Azerbaijan. The Karabakh issue remains unresolved because international organizations are not active enough in pressuring Armenia while Armenia doesn't miss a single chance to harm Azerbaijan.

Armenia, due to large Azerbaijani-Turkish investments, feels completely isolated and there is the possibility that it may use any opportunity to harm the TANAP project. For example, ASALA's letter addressed to the Azerbaijani embassy in Hungary made obvious threats to support the PKK, confirming the long-standing cooperation between these two terrorist organizations.

It is likely that in the near future, Iran will suffer a fate similar to Syria's, disrupting the energy balance in the region. If we consider the continuation of instability in Iraq along with potential unrest in Iran, the TANAP project gains even more weight.

Conclusion

TANAP is a great opportunity for both Turkey and Azerbaijan. For Azerbaijan, the realization of the project equals a possibility to transport its natural gas to the international market, independently from Russia. For Turkey, it will be a chance to reduce its dependence on current gas suppliers. Furthermore, the implementation of such large-scale projects will further strengthen relations between Azerbaijan and Turkey and will bring these two countries and their peoples together.

The implementation of this project during the Arab Spring has both positive and negative aspects. On one hand, during this period of energy uncertainty, the value and importance of the TANAP has increased. However, on the other hand, the growth of military-political instability in the region has become a serious threat to energy security in this particular area.

Turkey (which along with the EU-NABUCCO project) is participating in both the competing South Stream and TANAP projects. In other words, Turkey faces the challenge of learning to see energy resources not only as a subject of buying and sell goods, but also as part of a serious energy policy. Perhaps TANAP will be the first serious step in this direction.

EUROPEAN DEBT CRISIS AND ITS IMPACT ON COUNTRIES OF SOUTH-EASTERN EUROPE, CIS AND MENA

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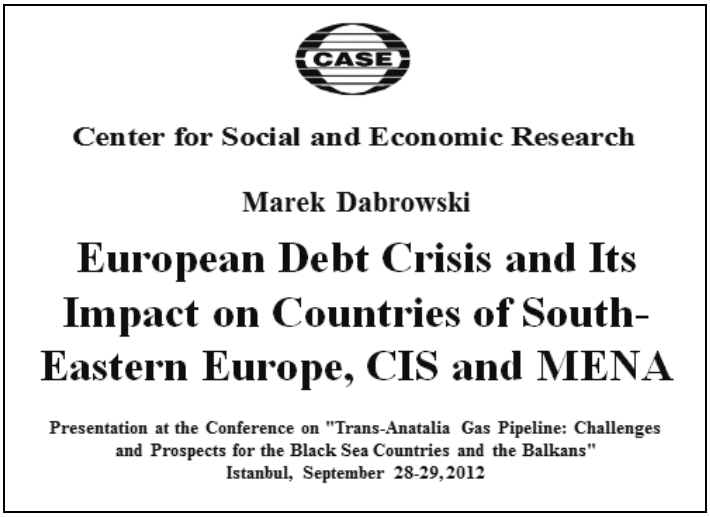

The key questions

- Character of the crisis and its causes
- Policy responses
- Economic and political spillovers outside the EU
  - global slowdown
  - negative impact on EU's neighbors (South Eastern Europe, CIS, MENA)
  - diminishing 'soft' power of the EU

Euro crisis or sovereign debt crisis?

- Currency crisis - a sudden decline in confidence in a given currency, leading to a speculative attack against it and resulting in its substantial depreciation
- Nothing like this has happened with the Euro so far
- Instead we observe a sovereign debt crisis in number of Eurozone countries and beyond
- In addition, uncertainty around the degree of fiscal solidarity inside EU/EMU and its concrete mechanism
- Potential contagion via financial sector (large portfolios of government bonds)
- However, as the ECB has become increasingly involved in rescue operations risks for the Euro and Eurozone are on the rise

GG gross debt-to-GDP ratio in the Eurozone, 2007-2012

Country	2007	2008	2009	2010	2011	2012
Eurozone	66.4	70.2	79.9	85.7	88.1	90.0
Austria	60.2	63.8	69.5	71.8	72.2	73.9
Belgium	84.1	89.3	95.9	96.2	98.5	99.1
Cyprus	58.5	48.6	58.3	61.3	71.8	74.3
Estonia	3.7	4.5	7.2	6.7	6.0	5.7
Finland	35.2	33.9	43.5	48.4	48.6	51.6
France	64.2	68.3	79.0	82.4	86.3	89.0
Germany	65.2	66.7	74.4	83.2	81.5	78.9
Greece	105.4	110.7	127.1	142.8	160.8	153.2
Ireland	24.8	44.2	65.2	92.5	105.0	113.1
Italy	103.1	105.8	116.1	118.7	120.1	123.4
Luxembourg	6.7	13.7	14.8	19.1	20.8	23.8
Malta	62.3	62.3	68.0	69.4	70.9	71.4
Netherlands	45.3	58.5	60.8	62.9	66.2	70.1
Portugal	68.3	71.6	83.1	93.4	106.8	112.4
Slovakia	29.6	27.9	35.6	41.1	44.6	47.1
Slovenia	23.1	21.9	35.3	38.8	47.3	52.5
Spain	36.3	40.2	53.9	61.2	68.5	79.0

Source: IMF WEO database, April 2012

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GG gross debt-to-GDP ratio in other EU and G7 countries, 2007-2012

Country	2007	2008	2009	2010	2011	2012
World	62.1	65.2	75.6	79.3	79.6	80.0
EU	59.5	64.0	74.4	79.6	82.4	84.5
Non-EMU EU members						
Bulgaria	18.6	15.5	15.6	16.7	17.0	21.3
Czech Rep.	28.0	28.7	34.3	37.6	41.5	43.9
Denmark	34.1	41.9	41.5	43.4	46.4	51.3
Hungary	67.0	72.9	79.7	81.3	80.4	76.3
Latvia	7.8	17.2	32.9	39.9	37.8	39.1
Lithuania	16.8	15.5	29.4	38.0	39.0	40.9
Poland	45.0	47.1	50.9	54.9	55.4	55.7
Romania	12.7	13.6	23.8	31.2	33.0	34.2
Sweden	40.2	38.8	42.5	39.4	37.4	35.5
UK	43.9	52.5	68.4	75.1	82.5	88.4
Other G7 countries						
Canada	66.5	71.1	83.6	85.1	85.0	84.7
Japan	183.0	191.8	210.2	215.3	229.8	235.8
US	67.2	76.1	89.9	98.5	102.9	106.6

Source: IMF WEO database, April 2012

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Summary: debt level and dynamics

- 12 out of 17 EMU (all but Estonia, Finland, Luxembourg, Slovakia and Slovenia) + Hungary & UK exceeded 60% of GDP threshold.
- 9 countries (Belgium, France, Germany, Greece, Hungary, Ireland, Italy, Portugal, UK) exceeded 80% of GDP.
- EU's debt exceeded 80% of GDP, Eurozone's –close to 90%, US > 100% of GDP, Japan's > 200%.
- Only 5 countries (Estonia, Germany, Hungary, Latvia, Sweden) improved their debt to GDP ratios in 2011
- Others: Greece +18 pp of GDP, Portugal +13.4 pp, Ireland +12.5 pp, Cyprus + 10.5 pp, Slovenia +8.5 pp, UK +7.4 pp, Spain +7.3 pp
- 2012: all but Estonia, Germany, Greece, Hungary, Sweden - will increase

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Causes of sovereign debt crisis

- Lax fiscal policy in good times based on overoptimistic estimation of growth potential
- Unexpected and unnoticed very high revenue elasticity of 2000s boom
- Unaddressed consequences of population aging
- Countercyclical fiscal policy during the crisis (multiplier <1)
- Costs of rescuing financial sector
- Global deleveraging, competition for resources, lower debt tolerance

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Responses: fiscal policy

- Fiscal adjustment plus microeconomic and institutional reforms (short-term costs, long-term benefits)
- Default/ restructuring (resistance of private sector, danger of banking crisis)
- Growing out from debt (?)
  - Lack borrowing space in many countries
  - Multiplier < 1
  - Other factors (e.g., deleveraging) will slow down growth in medium term

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Reforms on the EU level

- More fiscal federalism on the EU/EMU level
  - **Stronger fiscal surveillance/discipline rules**: YES
  - **European rescue mechanism and fund**: YES but clear rules and right incentives needed
  - **Sharing fiscal responsibility (Eurobonds)**: NO
  - **Larger EU budget**: MAYBE (depending on new mandates)
  - **Unification of tax base and tax rates**: MAYBE (related to SEM)
- European financial supervision and deposit guarantees: YES

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Responses: monetary policy

- Accommodation of fiscal tightening
- But limits: inflation risk, liquidity trap, central bank reputation (the case of ECB)
- Monetizing/inflating debt – danger of inflationary inertia/ indexation
- Conflict short-term vs. long term goals
  - Attempts to avoid financial market contagion
  - Fear of recession
  - Stimulating moral hazard

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Growth of real GDP, 2010-1012, country groups

Country group	2010	2011	2012f	2013f
World	5.3	3.9	3.5	3.9
Advanced economies	3.2	1.6	1.4	1.9
G7	3.0	1.4	1.5	1.9
EU	2.0	1.6	0.0	1.0
Eurozone	1.9	1.4	-0.3	0.7
Emerging and developing economies	7.5	6.2	5.6	5.9
CEE	4.5	5.3	1.9	2.8
CIS	4.8	4.9	4.1	4.1
Developing Asia	9.7	7.8	7.1	7.5
Latin America and the Caribbean	6.2	4.5	3.4	4.2
MENA	5.0	3.5	5.5	3.7
Sub-Saharan Africa	5.3	5.2	5.4	5.3

Source: IMF WEO Database, April 2012 plus July 2012 update

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Growth in advanced economies

Country	2010	2011	2012f	2013f
Australia	2.5	2.0	3.0	3.5
Canada	3.2	2.4	2.1	2.2
France	1.7	1.7	0.3	0.8
Germany	3.6	3.1	1.0	1.4
Italy	1.8	0.4	-1.9	-0.3
Japan	4.4	-0.7	2.4	1.5
Korea	6.3	3.6	3.5	4.0
Spain	-0.1	0.7	-1.5	-0.6
Sweden	5.8	4.0	0.9	2.3
UK	2.1	0.7	0.2	1.4
US	3.0	1.7	2.0	2.3

Source: IMF WEO, April & July 2012

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Growth in BRICS countries

Country	2010	2011	2012	2013
Brazil	7.5	2.7	2.5	4.6
China	10.4	9.2	8.0	8.5
India	10.8	7.1	6.1	6.5
Russia	4.3	4.3	4.0	3.9
South Africa	2.9	3.1	2.6	3.3

Source: IMF WEO, April 2012 + July 2012

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Growth prospects in CEE

Country	2010	2011	2012	2013
Albania	3.5	2.0	0.5	1.7
Bosnia and Herzegovina	0.7	1.7	0.0	1.0
Bulgaria	0.4	1.7	0.8	1.5
Croatia	-1.2	0.0	-0.5	1.0
Cyprus	1.1	0.5	-1.2	0.8
Greece	-3.5	-6.9	-4.7	0.0
Hungary	1.3	1.7	0.0	1.8
Kosovo	3.9	5.0	3.8	4.1
Latvia	-0.3	5.5	2.0	2.5
Lithuania	1.4	5.9	2.0	2.7
Macedonia	1.8	3.0	2.0	3.2
Malta	2.3	2.1	1.2	2.0
Montenegro	2.5	2.5	0.2	1.5
Poland	3.9	4.4	2.6	3.2
Romania	-1.6	2.5	1.5	3.0
Serbia	1.0	1.8	0.5	3.0
Slovakia	4.2	3.3	2.4	3.1
Slovenia	1.4	-0.2	-1.0	1.4
Turkey	9.0	8.5	2.3	3.2

Note: yellow field – IMF estimates and forecast
Source: IMF WEO database, April

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Growth prospects in the CIS

Country	2010	2011	2012	2013
Armenia	2.1	4.4	3.8	4.0
Azerbaijan	5.0	0.1	3.1	1.9
Belarus	7.7	5.3	3.0	3.3
Georgia	6.3	7.0	6.0	5.5
Kazakhstan	7.3	7.5	5.9	6.0
Kyrgyzstan	-0.5	5.7	5.0	5.5
Moldova	7.1	6.4	3.5	4.5
Russia	4.3	4.3	4.0	3.9
Tajikistan	6.5	7.4	6.0	6.0
Turkmenistan	9.2	14.7	7.0	6.7
Ukraine	4.1	5.2	3.0	3.5
Uzbekistan	8.5	8.3	7.0	6.5

Source: IMF WEO, April 2012 + July 2012

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Growth prospects in MENA

Country	2010	2011	2012	2013
Algeria	3.3	2.5	3.1	3.4
Bahrain	4.5	1.8	2.0	2.8
Egypt	5.1	1.8	1.5	3.3
Iran	5.9	2.0	0.4	1.3
Iraq	0.8	9.9	11.1	13.5
Jordan	2.3	2.5	2.8	3.0
Kuwait	3.4	8.2	6.6	1.8
Lebanon	7.0	1.5	3.0	4.0
Libya	2.5	-61.0	76.3	21.0
Morocco	3.7	4.3	3.7	4.3
Oman	4.0	5.5	5.0	4.0
Qatar	16.6	18.8	6.0	4.6
Saudi Arabia	4.6	6.8	6.0	4.1
Sudan	4.5	-3.9	-7.3	-1.5
Syria	3.4	n/a	n/a	n/a
Tunisia	3.1	-0.8	2.2	3.5
UAE	0.9	4.9	2.3	2.8
Yemen	7.7	-10.5	-0.9	2.9

Note: yellow field – IMF estimates and forecast
Source: IMF WEO database, April

What caused outlook deterioration?

- Sovereign debt crisis (globally and in Europe)
- Tightening the US monetary policy
- Consequences of overheating in some emerging-market economies
- High oil/ commodity prices
- Tighter financial sector regulations

Crisis proliferation: countries under the IMF programs

- Eurozone: Greece, Ireland, Portugal; possibly: Cyprus, Slovenia, Spain, Italy
- Non-Eurozone EU: Romania; possibly: Hungary
- SE Europe: Serbia, Kosovo
- CIS: Armenia, Georgia, Moldova, Kyrgyzstan, Ukraine
- MENA: Iraq, Jordan

Global economic risks

- Baseline scenario:
  - continuation of sovereign debt crisis in the EU, US and Japan
  - the new round of banking crisis as result of sovereign debt crisis (mostly in Europe but also outside)
  - stagnation/ shallow recession in Europe
  - longer period of slower growth worldwide
  - lower commodity prices
- Additional risks
  - disintegration of the Eurozone
  - the new wave of emerging-market crises
  - escalation of political conflicts in the Middle East
  - inflationary consequences of extremely lax monetary policies of the Fed, ECB, Bank of Japan, Bank of England, etc.

Political impact of financial crisis

- Global rebalancing (decreasing role of G7 vs. increasing role of 'emerging powers')
- Declining 'soft' power of the EU
  - smaller resources (including development aid and new pan-European investment projects)
  - slower pace of EU enlargement
  - less appetite for generous trade offers
  - declining attractiveness of EU outside this block

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ENERGY AS A POLITICAL FACTOR IN THE WIDER BLACK AND CASPIAN SEA REGION

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Introduction

Energy is the most important material driver of international politics in the modern world and this trend will continue for the foreseeable future as "chip oil era" comes to an end.

The demand and supply of energy products form the basis for long-term economic and political partnerships, or, due to high competition, undermines good relations and worsens the prospect for developing fruitful ties between countries.

This is the case in the wider Black and Caspian Sea region. In addition to other influential factors such as nationalism, religion, investments and trade in goods and services, energy remains the most important shaper of the political landscape in the region. Cooperation in all other fields – trade, investments, cultural exchange, and political cooperation, remains extremely low (with the exception of Turkey's growing investments in Russia). In fact, most countries in the region tend to search for global partners elsewhere but ignore countries in the region and pay very little attention to their immediate neighbors.

Internal and regional conflicts, including open armed confrontations in Georgia and Azerbaijan aggravate the situation. In Azerbaijan, the internal Karabakh conflict quickly transformed into an interstate conflict, resulting in Azerbaijan loosing territory and leaving Armenia in economic and political isolation.

Russia's violent interference in Georgia's internal affairs and subsequent territorial occupation in 2008 strongly damaged prospects for international projects. The situation around Iran also raises concerns heightening the threat of an open armed conflict in close proximity to the South Caucasus.

In a region that is facing so many challenges, it is of outmost importance to find opportunities for cooperation, inter-dependence, and for understanding the benefits of employing individual advantages to serve common goals. The development of mutually beneficial cooperation in the field of energy security is probably the easiest and most realistic possibility to unite the wider Black and Caspian Sea region.

Balance of Interests: "one against dozen"

The development of the energy business both influences and is dependent on the political and security climate in the region. The Trans-Anatolian gas pipeline (TANAP), is one of the options to transport Caspian gas across Turkey that has a high chance for success. First, growing energy consumption in Turkey creates a supply gap that needs to be addressed as quickly as possible. Secondly, Turkey borders the large and growing energy market of the EU and has the ambition to play a leading role in energy transit from the Caspian to the Black and Mediterranean Sea basins. Thirdly, Azerbaijan, the main stakeholder of the project, seeks to establish the infrastructure necessary to secure stable exports of its significant gas resources to the west.

A simple analysis shows two contradicting energy-related interests clashing in the wider region:

- Russia has become a "monopolist" energy supplier to Europe and Turkey, powering itself financially and securing growing political ambitions through the sale of hydrocarbons. Russia's energy resources are the basis for her "Power Politics", and allow her to ignore international law and resolutions; the most vivid example of which, is the recent occupation of Georgia without suffering any significant damage in her (Russia's) international position.

- All other actors in the region, consumers and suppliers of the hydrocarbons, may be said to share a common interest of "depriving" Russia from its exclusive position and secure the diversification of energy supply roots.

It is more or less resembling that Turkey, Azerbaijan, Georgia, Ukraine, Turkmenistan, Kazakhstan, and the Balkan states, backed by the US and Europe, should be able to cooperate to reduce Russia's decision making role and improve

the balance of "energy power" in the region. In reality, however, the situation is much more complicated and fragile. Russia possess geopolitical advantages difficult to overcome, and many factors impede consolidation of the above mentioned actors, especially while Russia's oil diplomacy works in a simple, but still quite efficient way.

Russia and Turkey: cleft partnership

One of Russia's foreign policy aims is to detach Turkey from its traditional ties with the West. A strong Russia-Turkey partnership or strategic alliance would put an end to South Caucasian energy dreams and would even affect Turkmenistan and Iran's prospects for reaching European markets in the foreseeable future. Russia and Turkey would gain significant influence over the European policy and be able to exploit full control over Black Sea affairs.

However, a close Russia-Turkey alliance is unlikely for several reasons. First, Turkey would very much be a junior member in this partnership. Russia would retain several other routes of transporting its oil and gas to Europe through Ukraine, Belarus, the Baltic Sea, and the Black Sea. In addition, Turkey would not only lose its leverage and leadership in relations with Azerbaijan and Georgia and in Central Asia (where Russia would remain the only actor after all), but would also lose any prospects of joining the EU. Turkish conditions for such an exclusive partnership would logically be a demand towards Russia to develop all future energy transit projects through Turkey. This would be impossible for Russia even simply for technical reasons, but more importantly, neither Russia, nor Turkey would be able to trust each other to such an extent.

The Turkish energy policy counts on all possible options and is developing energy ties (supply routes) from all directions – Russia (North), South Caucasus, Iran, Turkmenistan (East), Iraq (South), Egypt, Syria (West). Such a strategy allows it to play a crucial role in serving as energy hub for Europe. Turkey matches its diverse energy policy with a strategy of "Zero problems with neighbors", which includes active participation in peace initiatives, attempts to reconcile with Armenia and contribute to the Karabakh solution, leadership among Islamic neighbors, and other policies. These efforts fully match Turkey's ambition to become an energy hub and secure diverse energy input.

These interests are in contradiction to Moscow's desire to conserve not only its **leading** but **exclusive positions** as gas supplier to Europe. In fact, Turkey's

national interests and its unique geographical position causes headaches in Moscow and forces Russia to finance extremely costly pipeline projects under the Black Sea, just to avoid Turkey. Moscow's support for the pro-Russian government in Ukraine and its occupation of Georgian territory and menacing tone in the Caucasus are additional tools aimed to retain regional domination.

South Caucasus

Azerbaijan, which is surrounded by competitors rather than by potential importers of its energy products, finds its national interests in harmony with the Turkish strategy. It has been actively securing supplies of its oil and gas to Turkey and further to Europe. This route, cannot avoid Georgia due to the well known status of relations between Azerbaijan and Armenia. Despite its poor relations with Azerbaijan and Turkey, the development of a South Caucasian energy corridor (even bypassing Armenia) suits **Armenia**'s long-term interests as well. First, overall economic development of the South Caucasus would certainly positively influence Armenia. Secondly, development of big South Caucasian energy projects accompanied by the explosion of economic activities in Azerbaijan and Georgia would reduce overall motivation for war in the Karabakh settlement. Thirdly, after a settlement of the Karabakh stand-off, Armenia has a chance to be included as an important element of the East-West oil/gas transit routes and would benefit from her geographic advantages. However, expanding Turkish-Azeri cooperation contradicts Armenia's interests in the short and medium run as Armenia worries about constantly rising Azerbaijani GDP and military strength.

Georgia holds a key position between Turkey and Azerbaijan. Its pro-western orientation as well as full political independence from Russia makes the Azeri-Turkish projects viable. Without strong Georgian determination to use its geographical advantage to contribute to the development of the East-West (South Caucasian) energy corridor, Azerbaijan would have suffered from a dependence on Russia for access to European consumers, resembling with the current situation of Turkmenistan and Kazakhstan. Georgia is even more important because Azerbaijan has very limited opportunities to reach the emerging Eastern markets due to bad relations and hard competition with Iran. Thus, Georgia's Western (European) aspirations align it closely with interests in Azerbaijan.

Does Georgia have any other options other than to secure the East-West energy route through its territory?

Theoretically yes. Georgia could take the 'Armenian option', developing a strategic partnership with Russia in exchange for some guarantees – the withdrawal of troops from Abkhazia and South Ossetia and access to cheap energy sources. Russia has not abandoned its intensions to regain control over Georgia's foreign policy, and desires for Georgia to reject its Euro-Atlantic aspirations. Actually any Georgian government which make such a concession to Russia will face the frustration of around 80 percent of the population. The European sentiments of the Georgian society is a factor that cannot be ignored by any government, but the western orientation is not sustainable "at any cost". In other words, various shocks, economic difficulties, continuous security concerns, or external pressures may downgrade the Georgian society's support for western integration.

Georgia is in the process of government transition and the establishment of a regime looking for better relations with Moscow may turn the country away from its current western orientation. Such a change may occur even against the will of the majority of Georgians as demonstrated by similar political reverse in Ukraine and Russia.

Azerbaijan and Turkey cannot disregard this risk and both countries pay special attention to their relations with Georgia. They each show strong support for Georgia's current pro-western President and will try to renew assurances of collaboration in exchange for joint energy projects from the incoming government.

Concerns of the global actors American cooperation with Russia embraces Afghanistan (supplies, future withdrawal route), Iran (nuclear control), and missile defense and strategic arms reduction. Russia employs these American interests to soften and deter pressure on issues like the occupation of Georgia, human rights, international positions (Syria), and on other issues. Europe, the EU in particular, is dependent on Russian energy resources and seeks stronger trade partnerships and the safe expansion of investments in Russia. In the same time, the EU also has far-reaching interests of Europeanization and cooperation with the large post-Soviet space, East Europe and South Caucasus in particular.

Due to the EU's determination to engage countries Russia considers to be in its area of influence, the two entities are rivals rather than political allies and Russia is attempting to create another center of gravity. Therefore, the EU treads a careful balance of attempting to overcome its energy dependence on Russia without damaging its economic ties. The diversification of energy routes, a vital

step for achieving energy security, has become a pillar in EUs energy policy. To guarantee access for Azeri and later Turkmen (and maybe someday Iranian) gas to Europe represents a political priority for the EU and is aligned with the interests of Turkey.

Georgia and Azerbaijan naturally cooperate with Turkey in developing important transit routes to Europe. However, they also show interest in other alternatives to realize their comparative advantages and minimize risk. One such possibility is to make Ukraine a transit country for Azeri (and Caspian) oil and gas. Direct infrastructural connections between Georgia and Bulgaria (who also has options to become an "energy splitter" for various suppliers) or Romania under the Black Sea are also highly promoted by both governments.

Finally, Turkmenistan has three potential alternatives to reach Europe (including Central Europe and the Balkans). One supply route can go through Russia (currently Turkmenistan is completely dependent on Russia's transit function), another through a future trans-Caspian connection, and the third option is through Iran and Turkey. Each of these options has well known problems, but there remains the radically different possibility of developing to the East. Kazakhstan has practically the same options, but of course, the likelihood of alternatives depend on the political will of partners, matching business interests of main economic agents, and developing the relevant legal environment.

Conclusion

The purpose of these speculations was to show that there are not even two countries or actors involved in the wider Black and Caspian Sea region who have fully coinciding interests. There are too many alternatives, matching stimuli, and differences. It seems difficult to create stable political consortiums of countries which would refuse all other options and dedicate themselves to one common strategy (project). There are strong impediments for most countries to make or not any choices in favor or against the interest of other nations. At the same time, any country can understand that in such a complicated political environment, reaching a balance of interests is crucial for security, stability, and also for independence. Russia is the only country in the region that abuses her geopolitical advantages, trying to exploit excessive advantages including over decisions related to energy. Therefore, no one country, especially those, dependent on Russia's energy supplies will tolerate such behavior. Development of alternative routes of energy supply from the Caspian to Europe is inevitable

and remains just a matter of time. Russia will not be able to stop the development of the projects such as TANAP that will transport Caspian energy products to Europe.

Above I argued that the only factor able to bring the region together is energy. If energy related disagreements cause tensions between countries, developing a consensus on the rules of the game could bring lasting peace and stability to the region. It is important that every player accepts the principle of "no zero sum game" and refrains from taking advantage at the expense of others. Until nations in the region stop taking individual decisions without taking the interests of their neighbors into account, there will always be a high risk for sabotage and the failure of a project. To lessen such risks, it is important to hold a special political conference to establish 'rules of the game'. If such common understandings do not develop in the near future, the political risks in the region will always affect the price and prospects of economic projects.

A STEP AHEAD TOWARDS THE STAGE OF MATURATİON İN AZERBAİJANİ-TURKİSH RELATİONS: THE TRANS ANATOLİAN PİPELİNE

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The signature of the memorandum of understanding between Azerbaijan and Turkey on 26 December 2011 for the establishment of the consortium that will build the Trans Anatolian Pipeline (TANAP) to supply gas from Shah Deniz gas field to Europe through Turkey was a surprise development. The Azerbaijani-Turkish inter-governmental agreement on the implementation of the TANAP pipeline was signed on 26 June 2012. Both countries hailed TANAP as a step ahead '*towards a new age of partnership*'.

The Azerbaijani-Turkish pipeline project will emancipate the bilateral relations from the realm of emotions, set clearly the interests of each side, thus transferring cooperation between the two states on a healthier ground based on win-win pragmatic dealings.

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The deal carries to potential to upgrade Turkish-Azerbaijani energy relations to the level of Turkish-Russian relations. Russia has been Turkey's principal partner in the field of energy over the last 15 years. Russia has become indeed Turkey's major and as matter of fact the most reliable supplier. Furthermore, Turkey has been considering Russia - a country whose political will alone could change facts on the ground - as the cornerstone of her ambition to become an energy transit and a hub country. Interestingly a deal on the South Stream between Turkey and Russia came as an unexpected move a few days after the one on TANAP and less than two months after the decision of BOTAŞ not to review the 1986 gas deal. On

28 December Gazprom and Botaş signed the amended contracts as the South Stream permits were displayed to Prime Minister Putin.

TANAP as a post Nabucco pipeline and a transnational gas export project realized on the initiative of Azerbaijan and in cooperation with Turkey will be a game changer. Among SOCAR's most strategic investments capitalyzing on Turkey's future position in world geography, TANAP will fundamentally change the situation around bringing Caspian gas to Europe.

The process

To the Shah Deniz 2 agreement signed on 25 October 2011 in Izmir for the transit through Turkey and purchase of Azerbaijani gas succeded a period of lengthy negotiations on the transit agreement and the price setting.

The Shah Deniz gas producers' consortium in Azerbaijan could no longer postpone the investment decision in that project's Phase Two, which necessitates determining the transportation solution in early 2012. Azerbaijan expects gas production to reach some 50 bcm of gas annually by 2025 (double the present annual production). Apart from Shah Deniz, that increase is anticipated to come from the Apsheron, Umid, Babek, deep-water ACG, and possibly Shafak-Asiman projects, all involving international companies in partnerships with Azerbaijan. The inter-governmental agreement and the framework agreement on gas transit envisaged two possible options for the transit of Azerbaijani gas westward via Turkey. One option was to use Turkey's Botas-operated pipeline system, conditional on certain upgrading for this purpose. The other option was identified as a trans-Anatolian gas pipeline, to be jointly built across Turkey. Already at the signing event for these agreements, the Azerbaijani side made clear its preference for building a trans-Anatolia pipeline from scratch.

The agreement

TANAP is backed up by gas and funding from Azerbaijan. The cost is estimated at 5 billion USD. The partners will finance the construction of the pipeline proportionately to their respective ownership shares. (SOCAR: 80%, BOTAŞ: 10%, TPAO: 10%). Third-party gas-producing companies, apparently meaning Shah Deniz consortium partners, may be allowed to join the consortium later, as

minority shareholders. The capacity of the transit line is projected at 16 billion cubic meters (bcm) annually in the first stage, to be increased to 24 bcm in the second stage.

Of those amounts, Turkey will be entitled to buy 6 bcm annually from Shah Deniz, Phase Two of production (from 2017 onward), in accordance with the long-term agreement between Turkey and Azerbaijan. Under the MOU just signed, Azerbaijan and Turkey will complete the feasibility study for the trans-Anatolia pipeline in early 2012, start construction work in the same year, and complete the line in 2017. This date is correlated with the Shah Deniz production coming on stream in that year and reaching 16 bcm annually post-2017.

Connections towards European markets

The TANAP pipeline keeps alive the strategic rationale for a new southern energy corridor to provide Europe with non-Russian gas. The new pipeline will contribute to both Turkey's and the EU's security of supply. Mr Oettinger, the EU commissioner for energy welcomed the initiative stressing that *'Europe is now a step closer to its aim to get gas directly from Azerbaijan and the other countries in the Caspian region*.' TANAP's scheme falls outside the EU's scope, there is no guarantee that Azerbaijani gas will always be sent to European markerts. However Azerbaijan has a high interest in European markets because of their size, predictability and high value.

Shah Deniz consortium (BP and Norway's Statoil with 25.5 percent each; SOCAR, Total, Lukoil, and Iran's NICO with 10%; and TPAO with 9%) postponed from mid-2012 to mid-2013 the selection of a pipeline route for Azerbaijani gas to Europe. It is highly likely that TANAP will become the basis for the Southern gas Corridor and take over the functions of Nabucco's Turkish section though alternative routes are said to be still considered. The main issue is now how best to connect the pipeline to European markets.

- *Towards Central Europe:*

An abridged version of Nabucco rebaptised Nabucco West and downsized to one half of its design capacity (i.e., from 31 bcm to some 15 bcm annually), and starting from the Turkish-Bulgarian border (instead of starting in eastern Turkey) has recently been proposed by the project's Austrian management as one option. This could keep Nabucco alive as a continuation pipeline, from the planned

Trans-Anatolia pipeline into the Nabucco countries on EU territory. Nabucco West will be competing with two other options backed each with a consortium member of the Shah Deniz consortium.

British Petroleum (BP) has become the first among Shah Deniz producers to announce its intention to join the Nabucco consortium. The consortium has also made overtures to Azerbaijan's State Oil Company for possible entry into the Nabucco-West project. Logically along the same lines, the Nabucco project company has proposed in Baku to start talks about connecting Nabucco-West with TANAP

BP had previouly proposed a concept which would have made use of Turkey's state-owned pipelines. The first rationale of South-East Europe Pipeline (SEEP) was to save on pipeline construction costs. SEEP would use existing, nationally owned pipelines, pipeline sections, and interconnectors along the entire route from eastern Turkey to central Europe. It would build some new sections and upgrade some others in half-a-dozen countries, instead of building a new, dedicated pipeline.

- *Towards Southern Europe:*

Trans-Adriatic Pipeline (TAP): led by Statoil (commercial operator in the Shah Deniz consortium) for possible transportation of Azerbaijani gas via the western Balkans to Italy. 20 bcm annually to southern Europe, instead of central Europe. TAP would use Turkey's pipelines and build a new pipeline for part of the way in Greece. TAP would reach Italy via Greece, Albania and the Adriatic seabed.

Implications for Azerbaijan

A dedicated pipeline, or one under Azerbaijan's control in Turkey, is the optimal solution from Azerbaijan's standpoint. The Nabucco consortium had never resolved the issue of accepting Azerbaijan's State Oil Company as a partner in that pipeline project. The major control of the Shah Deniz II gas exports via the TANAP pipeline will lie almost exclusively by Azerbaijan itself rather than by a European pipeline consortium.

For Azerbaijan, it opens new export opportunities and allow the diversification of external relations and stable income with the opening of the Caspian to the West. TANAP will enable Azerbaijan, for the first time, to sell its own gas

through its own pipeline, at Turkey's western border with the EU, directly to European customers. Using an Azerbaijani-owned pipeline without having to pay for the transit service would make Azerbaijan's gas price-competitive in Europe. Baku describes this project as a "direct road from Azerbaijan to Europe" and "Azerbaijan's road into the future." Azerbaijan is assuming a triple role: energy supplier country, transit country (transcaspian dimension), investor country beyond its own borders.

Implications for Turkey

Turkey will be entitled to buy 6 bcm/y from Shah Deniz Phase Two of production in accordance with the long term signed previously with Azerbaijan, to supply her domestic market. The very first priority for Turkey is to meet her supply security needs. According to BOTAŞ, Turkey's natural gas demand is expected to increase to around 66 bcm by 2020. But without additional import contracts, Turkey will only be supplied with approximately 41 bcm by 2020. The existence of the bilateral long term gas purchase agreement was forgotten during the negotiation for the Nabucco pipeline project. Turkish requests to secure 15% of the gas piped through Nabucco and 4-8 bcm/y of the Azeri gas to supply her domestic market was considered as unacceptable. Ankara found it exceedingly difficult to agree to allow the passage of substantial gas volumes across Turkish territory without being able to access a portion of these volumes for the Turkish market.

For the first time Turkey will be a main partner in a pipeline project and realize her aim of becoming the fourth artery of Europe in terms of natural gas. The trans-Anatolia project will confirm Turkey's role as an energy corridor to Europe and intersection of multiple supply routes for Turkey itself. Whether the trans-Anatolia project also involves gas storage in Turkey remains an open question. Some remarks from Azerbaijan at the signing event about marketing gas in Europe together, may be read as implying some storage in Turkey.

Implications for Georgia

Georgia enjoys a win-win position on the transit route from Azerbaijan to Turkey. The trans-Anatolia project, at 16 bcm to 24 bcm annually, presupposes at

least doubling the capacity of the pipeline through Georgia, and at least trebling the gas flow from the present level.

Fierce negotiations ahead

In the near future, bilateral efforts will focus on working out the details and mechanisms of the agreements. This can give way to lengthy negotiations. Commercial considerations and pragmatic dealings will prevail at the end of the day. The continuation of the brother rhetoric in this context carries the risk of blurring the picture of each side's own interest and prerogatives which will become irritating for both sides.

Importing low cost gas ranks high in the list of BOTAŞ's priority for Turkey's energy security. Noting Turkey's geographical location, BOTAŞ has been opposed to paying the same price as Central Europeans for gas produced in the Caspian and Gulf regions and in the Middle East. Turkish officials have been insisting on purchasing the gas at Turkey's eastern border at a lower price. On the contrary, Azerbaijan has an interest in selling its gas at the highest price.

Azerbaijan's gas production will likely reach 30 bcm/y by 2015 and 50 bcm/y by 2025. The conditions of the transit of the Azeri gas onwards the high value European markets have to be clearly settled. Turkey should be moving towards formalizing a gas transit regime. In the longer term, Turkey's aspiration to become an energy trading hub as opposed to a merely physical hub would imply the reselling of gas.

The negotiations ahead will take place in a context where SOCAR will be an important player in the Turkish context. SOCAR is becoming the biggest international direct investor in Turkey's economy. By late 2017, SOCAR's investments in the Turkish economy are expected to reach 17 USD billion including the PETKİM acquisition and TANAP.

Recently, SOCAR explained the delay in reaching the deal over issues related to tax and investment regime and not over the size of the respective stakes between Azerbaijani and Turkish partners as it has been presumed in the press. News that Turkish entities were seeking an equal stake with SOCAR in the TANAP project circulated before the signature of the intergovernmental agreement. SOCAR may indeed feel constrained because they plan to distribute parts of their 80 percent stake in TANAP to companies with gas drilling rights in Azerbaijan; namely, BP

and Statoil, both of whom have proposed to join the pipeline. Regardless of TANAP's final ownership structure, SOCAR would insist on retaining control of the pipeline's management. It is equally important to notice that SOCAR has publicly disagreed with an assessment by BP that the original Nabucco route is off the table for the Shah Deniz-II gas project.

PLANS FOR EURASIA UNION AS REGIONAL SECURITY CHALLENGE TO TANAP

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In September 2011, when Russian President Vladimir Putin introduced his vision of a common future for countries that had constituted the former Soviet Union, it did not receive adequate attention in the region and in the world. Most people attributed his famous article in the *Известия* newspaper to the then approaching parliamentary and presidential elections.

Even though the article has set a tentative schedule for a Eurasia Union, a kind of Soviet Union without socialism, its significance in shaping Russia's policy in the neighbourhood remains underestimated. Optimistic regional cooperation projects between Azerbaijan, Georgia, and Turkey, in particular the Trans-Anatolian Gas pipeline project (TANAP), may suffer serious shocks if the decisiveness of the Kremlin is not taken into account in the broader policy framework around those projects.

A previous instance where the imperialistic ambitions of president Putin were neglected occurred when Kosovo was recognized in violation of OSCE principles. This led to the war between Russia and Georgia and the recognition of Abkhazia and South Ossetia by a small group of states. The Kosovo process had its own logic, not strongly connected to considerations about the South Caucasus. It is quite possible that NATO countries had no other option, but to recognize Kosovo and then try to deal with the Russian reaction. However, that option has crystallized as a result of a series of prior strategic mistakes.

One can look at the strategic importance of the South Caucasus from several angles, but its ability to provide NATO with a reliable corridor to Central Asia plays a crucial role in the understanding of the region by Russian policymakers.

Putin’s plans for restoration of the Union become much easier if Moscow effectively blocks this corridor. Such a step is possible through four

scenarios/policy lines: i) establishing a strong partnership with the government of Azerbaijan; ii) bringing a pro-Russian government to power in Georgia; iii) destabilization and partition of Georgia; and iv) guarantees of security to Armenia with the aim of re-igniting the Karabakh conflict. Each of these scenarios effectively blocks the Caucasus corridor for NATO.

In the past ten years the Russian government has been working to keep all these options open, although some of them occasionally prevailed in the visible side of its foreign policy.

Since the second half of 2011, the first option, developing close ties with Azerbaijan, seems to have failed for Russia as Azerbaijani President Ilham Aliyev has become obviously disillusioned about the Kremlin's ability to rectify the consequences of its sizable military assistance to Armenia. Throughout his eight year presidency, Mr. Aliyev has been criticised domestically for striving to appease Russia. The defense used by representatives of the ruling New Azerbaijan Party was that the growing strength of Azerbaijan as a market for Russian goods and other advantages of Azerbaijan's new oil-driven prosperity, alongside with its rising geopolitical significance, would convince Russia of the benefit of having Azerbaijan, rather than Armenia, as a primary ally in the South Caucasus.

Aliyev believed that if he 'behaved,' the Kremlin would discontinue its 300 years-long alliance with Armenia by forcing the latter to solve the Karabakh conflict with the support of Azerbaijan's territorial integrity. He allowed Russian President Medvedev to become the leading mediator among OSCE Minsk Group co-chairs. Mr. Medvedev seemed to truly desire to bring Armenia and Azerbaijan to an agreement, but he proved unable to break the inertia of thinking among Russia's reactionary forces, thus leading parties to the current deadlock at talks.

Ilham Aliyev's disillusionment with Russia, however, did not result in a revival of the anti-Russian rhetoric that characterized the Azerbaijani government throughout the 1990s. Instead, President Aliyev reformulated his foreign policy. In a routine speech in autumn 2011 he proclaimed a "foreign policy of national interest" to replace the former "balanced" policy.

One of the clearest examples of the change of attitude was the solemn anti-Russian speech that Georgian President Mikheil Saakashvili was allowed to deliver in Azerbaijan's parliament in autumn 2012. Baku did nothing to influence the timing or content of that speech. Azerbaijan has also demonstrated zero

solidarity with Russia at the UN Security Council during discussions about Syria, instead supporting the Arab League. Moreover, Baku has placed very tough conditions regarding the future of the Russian Qabala radar station. The stations' ten year lease expires at the end of 2012, and so far there is no sign that Baku is willing to allow the station to continue operation.

In August 2012, attempts to revive the Azerbaijani- Russian friendship were been made by Russian Deputy Prime Minister Dmitry Rogozin. He came to Baku with proposals for Azerbaijan to join the Customs Union and the future Eurasia Union, but without any guarantees of satisfying Azerbaijan's most principled demand, the restoration of territorial integrity. After the visit, Baku has somewhat softened its stance on the Qabala radar station by expressing readiness to sign a very short-term lease agreement. However, Russia insists on a long-term contract that would make the overdue complete renovation of the station sensible.

For the second option, influencing domestic politics of Georgia, Russia has continued efforts to discredit Saakashvili as recognizable partner, and build a viable opposition for the 2012 parliamentary elections and 2013 presidential election. Tools employed right after the war of 2008, such as putting forward leaders such as Nino Burjanadze, convinced neither local nor international audiences. Therefore a more solid opposition without a clear pro-Russian agenda has been put together in the past one year under the leadership of Mr. Bidzina Ivanishvili, who had grabbed his billionaire fortune in Russia.

Ivanishvili promises to combine Georgia's current Euro-Atlantic path with improved Moscow ties. According to polls, he has been able to build a substantial local support base in only one year in politics. His contribution to the Georgian political scene is obviously more complex, and probably quite different from that of a mere pro-Russian billionaire. He has brought a legitimate and much needed challenge to the authority of president Saakashvili, mainly because he represents none of the forces of Georgia's grim past.

The net outcome of his involvement will be decided in the course of the two approaching electoral cycles. In the light of Russia's existing strategic options, Georgian democracy may turn toxic, and thus serve the aforementioned plans of construction of the Eurasia Union. If legitimate ways of installing a pro-Russian government do not deliver an acceptable outcome, post-election riots may be endorsed once a convenient international moment appears.

One such moment may be provided by international military intervention in Syria. The Kremlin's hard-hitting stance on the OSCE principles in Kosovo was underestimated in 2008, putting the entire South Caucasus region in a very difficult situation due to resumed war in South Ossetia. A similar event is likely in the case of a Syria intervention: if Western allies or Turkey alone choose to interfere militarily in the Syria conflict, Russia will most probably interpret this as an indulgence for launching massive hostilities in Georgia or even capturing Tbilisi.

The recent Lopota valley incident, where a well armed group of allegedly 'Islamist militants' penetrated the Georgian border from Dagestan, was interpreted by many observers as a Russian provocation, testing the readiness of Georgian state to handle armed conflicts spilling over from the North Caucasus.

If none of the first three strategies for blocking the South Caucasus corridor to Central Asia prove effective, the Kremlin will certainly resort to the resumption of the Karabakh conflict or instigate a new one – for example involving Lezgi and Avar minorities in Azerbaijan.

Every time Russian-Azerbaijani relations experience particularly difficult moments, Moscow raises the issue of cross-border ethnic groups. A few months ago, a provocative conference concerning these minorities was held at the President Hotel in Moscow, and another one is expected in early October in the Dagestani town of Khasavyurd.

This round of political provocations are linked to the future of the Qabala radar station as well Azerbaijan's stance on energy and geopolitical issues. By adopting the TANAP export route for its gas, constructively approaching the idea of a Trans-Caspian gas pipeline, rejecting the 'balanced' foreign policy, and by nearly returning to the path of Euro-Atlantic affiliation (only in terms of foreign policy, and not domestic political standards), Azerbaijan has become a serious impediment to the Eurasia Union ambitions of President Putin.

In September 2012, the President of the Azerbaijan State Oil Company (SOCAR) Mr. Rovnag Abdullayev said that the construction of TANAP was expected to begin in the end of 2013, and the first gas supplies to start in 2017. The timing falls perfectly into the timeline for the birth of Eurasia Union. In October 2011, President Putin said that by the year 2015 the establishment of the Eurasia Union would materialize "if we act as energetically as we have been working up to now."

Actions against stability in Azerbaijan and Georgia are not limited to biased conferences and party politics. In September 2012, NATO Secretary General Anders Fogh Rasmussen described the massive military exercises of the Collective Security Treaty Organization (CSTO) in North and South Caucasus as 'lacking transparency.' In particular, foreign observers were not invited, and the exercises were in fact those of the Russian army using the CSTO umbrella. Moreover, Russians conducted the exercises not only in Armenia, a member of CSTO, but also on the occupied territories of Azerbaijan. It is not clear, how the Russian military were brought to the occupied territories, because neither that area nor Armenia border Russia, and Georgian airspace is closed for Russian military over-flights.

Probably in response to the CSTO military exercises, in the end of September 2012 Turkey, Georgia, and Azerbaijan conducted joint command post exercises in Ankara.

Earlier, in June 2012, The New York Times reported that Russian fighter jets were conducting an increasing number of training flights over Armenia. Stationed at a base in Armenia Russia has conducted about 300 training flights since the beginning of 2012, and has increased the number of flying hours by more than 20 percent from last year.

Even without such preparations, the situation on the frontline between Azerbaijan and Armenia is rather fragile. In the past twelve months, OSCE Minsk Group co-chairs called the status quo 'unacceptable' several times. Meanwhile, attempts of Armenia to fortify it continue. In this respect, the interests of the Armenian elite contradicts Russia's policy of keeping the conflict ready to explode at any moment.

However, it is sometimes difficult to relate policy choices made in Yerevan to the Armenia's obvious interest in legitimizing the occupation. For example, in September 2012 the lawful extradition and pardoning of Ramil Safarov, an Azerbaijani officer who in 2004 killed an Armenian officer at a NATO language training course in Budapest and had been serving lifetime sentence in Hungarian prison, drew one of the tense background pictures at the negotiations scene.

Speaking at a Council of Europe event in Strasbourg, Azerbaijani Parliament Chairman Oqtay Asadov said that by inflating the significance of the Safarov case, Yerevan aspired to protect the status quo. This assessment, however, is far from the truth. Armenia continues to build a highly emotional and inaccurate pictures of reality to exploit each and every incident in order to serve the

Kremlin's interest of keeping the conflict alive and difficult to solve, rather than simply preserving a fragile peace. Ironically, such provocations also serve Azerbaijan's interests because the international recognition of public hysteria as a legitimate tool of influencing talks sets solid precedent for the Azerbaijani and Turkish Diaspora organizations growing in strength around the world.

Opportunities for similar emotional campaigns are offered by the obsolete and further degrading status of the Armenian nuclear plant, close economic ties between Iran and Armenia which are often in violation of international sanctions, any criminal incident involving ethnic Armenians and Azerbaijanis living in a third country, and other contentious issues.

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Vladimir Putin's ambition to form a new conglomerate of states into a Eurasian Union represents one of the most serious challenges to the Trans-Anatolian gas pipeline because the Kremlin intends to use the existing security and political fragilities in the South Caucasus region to achieve that goal. Any of the unresolved conflicts may grow big enough to paralyze the region's key strategic role as a transit corridor between Europe and Central Asia. Moreover, new conflicts can be launched in order to destabilize the region at a convenient international moment. Greater economic, political, and military integration and cooperation between Georgia and Azerbaijan, as well as a more sober view of Armenia's role in the South Caucasus by the Euro-Atlantic community are essential to override the Kremlin's determination to reinvent the Soviet alliance.

CHAPTER 3

TANAP and other projects of the Southern Energy Corridor

PROJECTS UNDER SOUTHERN ENERGY CORRIDOR AND ENERGY SECURITY OF GEORGIA IN THE CHANGING REGIONAL CONTEXT

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Honorable guests, distinguished colleagues, ladies and gentlemen,

It is a great honor for me to welcome you on behalf of the Ministry of Energy and Natural Resources of Georgia for the occasion of the conference. This is an important event that will provide us with an excellent opportunity to discuss the most important issues in energy security. I hereby express my most sincere gratitude to the organizers for the excellent organization of the event.

Today, I would like to use this opportunity to briefly overview the latest developments and current energy market trends in the wider Black Sea and Caspian Sea region.

As each of you is aware, the world of energy is experiencing both large-scale changes and challenges. Over the last several years world energy demand has been rising at its highest rates in history. In this situation, the world's greatest challenge is to ensure that growing energy dependence does not become a risk to wider economic or international security.

The limited nature of energy resources and regularly increasing production difficulties have forced national governments to look to new possibilities for energy diversification.

In this context the main *Energy Challenges* we face today are:

1. How to meet growing energy demand;
2. How to increase energy security on national, regional and international levels;

3. How to balance geopolitical interests of producer, transit and consumer countries;

All of these challenges recognize no borders and significantly affect every country. Here, we all have to use our best efforts to transform our particularities into a common approach and attempt to answer the challenges surrounding today's energy geopolitics.

1. Growing energy demand

Considering that one of the main components of any country's energy security is to satisfy increasing energy demand, the importance of new fields of energy resources will only further increase.

In this regard, the considerable oil and gas resources of the Caspian region play an increasingly important role in the world energy market and constitute the most accessible alternative energy supplies for the region.

Since independence, the Caspian Sea countries have made substantial progress towards developing their hydrocarbon resources and have received favorable consideration by foreign investors. For example, the successful development of the Shah-Deniz II gas field provides clear evidence of the cooperation between national energy companies and foreign investors.

The Caspian countries have considerable untapped oil and natural gas resources, but many are facing difficulties in delivering the hydrocarbon resources to lucrative international markets due to the lack of developed infrastructure in the region.

Access is needed to bring the considerable natural gas reserves of the Caspian Sea to both eastern and western markets. Development of the necessary infrastructure will increase economic welfare for producer countries while satisfying the rising energy demands of consumer nations.

2. Diversification of supply routes

The diversification and security of supply routes is one of the most important aspects of energy security and necessary in order to meet the needs of both energy producer and consumer countries while ensuring delivery of Caspian energy to the Eurasian market. The energy crisis recently affecting several

Eurasian countries once again demonstrates the importance of a diverse energy supply.

It is certain that significant amounts of Caspian oil and gas will reach the Eurasian market in the near future. The central question is through which supply routes will this take place. Due to its strategic location between the Caspian and Europe, the role of the Black Sea region will be vital to deciding the western supply question.

3. Cooperation among market players

Currently, the rapid growth of the world's demand for energy sets the agenda for both the utilization of new energy resources,and also for a review of relations between **consumer**, **transit** and **supplier** countries.

The development of new energy routes has also put a review of political cooperation between consumer, transit, and supplier countries on the agenda and may lead to the development of new priorities. Stable, non-discriminative co-operation between these players will ensure the security of supply and gradually increase the importance of transit countries.

Today transit countries are gaining in importance, no longer simply representing energy corridors, but setting new trends and determining the feasibility of new projects through their foreign policy and domestic stability.

A clear example is the incrased transit role played by the Black sea countries since the discovery of huge gas and oil reserves in the Caspian Sea basin. Increasing demand for energy resources, tense energy markets, and the lack of energy infrastructure is stimulating deeper cooperation between consumer, transit and supplier countries.

Projects under Southern Energy Corridor and the role of Georgia

The importance of secure and diverse energy supply routes to today's energy diplomacy has given the development of new energy transportation routes more and more importance.

The considerable oil and gas resources of the Caspian region, primarily in Azerbaijan, Kazakhstan, and Turkmenistan, represent the most accessible alternative energy supplies for Europe. The question of which route is the most

stable and secure for delivering Caspian hydrocarbons to the EU market has been answered by experiences over the last couple of years which have proved that access routes to Caspian resources are secure and free from political influence.

In order to avoid a possible energy crisis in the future, new objectives have been set by the EU that encourage transportation of oil and gas from the Caspian. Such objectives read: *"**Bring large volumes of Caspian gas to South East Europe and beyond through a dedicated and scalable infrastructure, with a transparent transit regime.**"*

So far, the Baku-Tbilisi-Ceyhan (BTC) oil pipeline and the Baku-Tbilisi-Erzurum (BTE) gas pipeline (or South Caucasus Pipeline - SCP), constitute the only infrastructure free from political influence for bringing Caspian energy to the European market. However, the delivery of significant additional amounts of Caspian natural gas to Europe requires improving infrastructure.

In this regard, the development of the Southern Energy Corridor concept in 2009 was a successful step, bringing several new energy transportation options to the table. Signing the NABUCCO Intergovernmental Agreement in 2009 was a significant step towards development of the Southern Energy Corridor and allow me to remind you that one of the main points of the declaration was the reflection of willingness of participants, ***"to support further cooperation among the European Union, its Member States, Turkey, Georgia, the countries of the Caspian Sea region and the Middle East, aiming at the creation of an effective energy partnership including reliable ways of meeting the domestic needs of producing countries, transit countries and European markets."***

NABUCCO will provide the infrastructure needed for bringing large amounts of Turkmen gas across the Caspian Sea and on to Europe in the future. However, there still remains much to be done for the implementation of this project.

It is extremely vital to balance the existing relations among energy producer, consumer and transit countries. Though various issues of commercial viability and supply sources are still under consideration, I want to stress that the implementation of the project will support energy diversification while decreasing energy dependence on states which use energy as a political lever.

The EU, as a main contributor to NABUCCO negotiations, plays an important role for further development of the project. Its current approach towards the development of the Southern Gas Corridor is the following:

- To open the Southern Gas Corridor with gas from the Shah Deniz II field;

- To receive additional volumes of gas from other Azerbaijani gas fields ;
- To identify other sources of gas from Turkmenistan;

Launching another new energy transportation initiative within the framework of Southern Gas Corridor (TANAP) was a significant event. As you are aware, this is a new **Trans-Anatolia Gas pipeline** project with a planned capacity of 16 bcm, which aims to deliver Caspian Gas from Azerbaijan through Georgia and Turkey to Europe. This project is connected to the NABUCCO initiative as it will replace the NABUCCO project on Turkey's territory, thus decreasing NABUCCO's length and cost without affecting the planned transportation capacity. NABUCCO would then continue out of the TANAP pipeline into Central Europe as originally planned.

From the perspective of Azerbaijan and Turkey the project will bring significant benefits. Termed a "**Direct road from Azerbaijan to Europe", TANAP would** enable Azerbaijan to reach European customers directly, selling its own gas though its' own pipeline and thus increasing the competitiveness of Azerbaijani gas in European markets. The pipeline will also help satisfy Turkey's demand for gas by providing direct access for Azerbaijani gas.

Under this project Azerbaijani gas enters at Turkey from the east at Erzurum, utilizing the BTE pipeline (South Caucasus Pipeline (SCP)). Georgia, as a major transit country for the BTE and BTC projects, has already proven itself as a strong and stable partner in the region and can provide safe infrastructure and a relevant legislative framework to regulate transportation of gas at around 30 BCM. As you are aware, most roads delivering energy resources to international markets run across the Black sea region, beginning with Georgia.

In its Communication on the Black Sea Synergy (April 2007), the European Commission pointed out that, "***The Black Sea region is a production and transmission area of strategic importance for EU energy supply security. It offers significant potential for energy supply diversification and it is therefore an important component of the EU's external energy strategy.***"

In this regard, **Georgia plays a key role as** a vital transit route for Caspian hydrocarbons heading for the international consumer, supporting European countries to reduce their dependence on a single source of energy and enabling Asian countries to diversify their exports.

Thus, participation in the construction of alternative energy routes from the East into Europe will remain a main goal in Georgia's energy strategy.

Georgia's strategic importance is reflected by comprehensive initiatives and cooperation policies. Beside the successful realization of **BTC and BTE pipelines**, Georgia's inclusion in **Nabucco, AGRI, EAOTC, White Stream and other projects**, demonstrates its important role in the development of the Southern Corridor route.

Important steps have been taken under the **EAOTC** project (Euro-Asian Oil Transportation Corridor). Throughout 2012 MPR "Sarmatia" LLC have continued the implementation of the pre-agreement on the construction of the Brody-Płock oil pipeline, which has the possibility of stretching either to Gdańsk or heading to the west. MPR "Sarmatia" has selected a consultant for the preparation of a feasibility study, environmental report and routing report, as well as for providing necessary support during the submission of documentation for receiving EU financial support. . At the current stage, works are underway for the fulfillment of other obligations under the above-mentioned agreement.

LNG Options

It is imperative to emphasize that new pipelines are just one piece of energy security puzzle. Pipelines alone will not sufficiently provide energy security and it is necessary to develop other directions as well. In this line, new LNG developments can offer many advantages.

LNG will provide more price competition, direct connection with European consumers, new ways to think about long-term contracts, and the development of a real market for natural gas. The LNG option will also offer the final consumers supply routes diversification, while providing a strong tool for increasing energy independence and ensuring security of demand for producers.

The Black Sea is also becoming increasingly important the implementation of liquefied gas projects and through the developing of Georgia's transit role in liquefied gas as well as gas and oil. The recently signed intergovernmental agreement between Azerbaijan, Georgia, and Romania on the "AGRI" project is a result of this aspiration.

A feasibility study for the AGRI project is underway to determine the infrastructure development needs for the region, including the construction, reconstruction and improvement of a Gas Transmission System from source to final destination.

The implementation of this project will set a precedence for the possibility of a alternative route from the Caspian basin towards Europe via "non-territorial" Black Sea waters.

Based on the above mentioned, Georgia, in cooperation with its neighbors, intends to be very active in contributing to the further development of the southern gas corridor, an initiative that will link the Caspian region even closer to Europe.

Georgia continues to look to integrate into the European Union's energy networks in order to fully utilize the country's transit potential and take its part in the in trans-regional and European energy systems. To achieve this goal, Georgia is implementing the main goals of ***ENP AP (European Neighboring Policy Action Plan)*** and expanding partnerships with the EU through different instruments, including the ***Eastern Partnership***.

In addition, Georgia actively collaborates with the European organizations such as the ***Energy Community*** and ***Energy Charter Organization*** in order to create a stable and regulatory market framework capable of attracting investment. **The main target of energy sector reform** has been the congruence of Georgia's energy sector parameters with best practices of the European Union, and Georgia continues to participate in discussions over the draft transit protocol **of the European Energy Charter (the last meeting was held on 19 June, in Brussels)**, observe the **Energy Community**, contemplate future regional prospects of cooperation under the **INOGATE program** and negotiate an **Association Agreement with the EU**.

In addition, the ongoing ***Association Agreement*** negotiations between Georgia and the EU will define the concrete commitments required to bring Georgia in line with the EU legal and regulatory framework.

In conclusion,

Let me once again underline that recent developments in the world have proven how challenging the future is going to be, especially for the countries of the Caspian and Black Sea regions.

It is evident that energy markets are becoming more and more globalised and that it is not possible to deal with energy challenges exclusively on a national basis. Our energy security depends on building up cooperation, dialogue and negotiations with all stakeholders.

Georgia, on its part, will gradually serve as a strong partner in establishing reliable transportation lines by developing existing transport infrastructure and by introducing new transit roads.

PIPELINES AT THE EAST WEST AXIS

M. Mete Goknel
Former president of BOTAS, Turkey

INTRODUCTION

Energy is a central economic input without which no social or economic development can be achieved. Thus, security of energy supply, the accessibility of energy, its availability in sufficient quantities, and the stability of supply and pricing is extremely important for both developed and developing countries.

Nevertheless, there are no easy solutions in the field of energy policy as no current source of energy is both environmentally friendly and cost-effective. Gas, oil, coal, nuclear energy, and renewable energies each have advantages and disadvantages in terms of economic growth.

Energy security is closely related with both economic and national security and is one of the main components of domestic and foreign policy.

One of the most important energy security factors is securing transportation links between the energy source and the market.

PIPELINE STRATEGY AND TURKEY

Communication between oil and gas producing nations and consumers is mainly established via pipelines. Depending on distance and geographical conditions, this connection can be maintained both by means of pipelines, and via other means of transport. Oil is generally transported to the coast (closer to markets) through pipelines before being taken by tankers to the final market. Natural gas is delivered via pipelines or in special cases in the form of compressed natural gas (CNG) or liquefied natural gas (LNG), and taken to market with special marine or inland tankers.

Due to its geographical location, Anatolia has played the role of a technological, commercial, and cultural bridge between East and West for centuries. Today,

Turkey's connecting role has been supplemented by its importance as an energy bridge through which energy sources from the Middle East and Caspian basin are transported to international markets via the safest routes and with the most competitive prices.

East to West, Anatolia connects Europe to Asia, and north to south the Mediterranean and Middle East region, which makes it an important strategic point. Its central location allows Turkey to control energy and security issues from Europe to the Balkans, the Aegean Sea, and the Eastern Mediterranean and from the Black Sea across the Caucasus all the way to Central Asia.

For example, the ITP (Kirkuk-Yumurtalik) pipeline was built in 1984 to transport Iraqi oil to the Mediterranean. Increased demand led to the opening of a second line in 1987, increasing capacity to 70,9 MT (million tons) and the total length of pipeline to 1876 km. The most suitable route to deliver Azerbaijani oil to the world market also lies through Anatolia and the BTC (Baku-Tbilisi-Ceyhan) pipeline was built in 2006 with a length of 1786 km and a volume of 50 MT.

In terms of natural gas sources, the Caspian basin is no less important than the Middle East. As shown in Table 1, the Caspian basin's oil and gas reserves are the second largest in the world after the Persian Gulf, making the region an important economic force.[12] Table 1 demonstrates the strategic importance of regional cooperation for Turkey.

Table 1: Data on reserves, production and export of natural gas from the Caspian Basin and Russia (end of 2011 / bcm)

Countries	Reserves	In %	Production	Export
Azerbaijan	1300	0,62	14,80	7,18
Kazakhstan	1900	0,91	19,30	11,55
Turkmenistan	24300	11,66	59,50	34,59
Russia	44600	21,40	607,00	207,05
Total	**72100**	**34,60**	**700,60**	**260,37**
Total in the world	**208400**	**100,00**	**3276,20**	**694,61**

[1] BP Statistical Review of World Energy June 2012,
http://www.bp.com/statisticalreview

[2] http://www.bsec-organization.org

When huge reserves of natural gas (Shah Deniz I) were discovered in Azerbaijan, Turkey was chosen to host the pipeline to transport gas to Turkish consumers and the Balkans. The Baku-Tbilisi-Erzurum (BTE) or South Caucasus Pipeline was introduced in 2007 and had a capacity of 20.0 bcm (billion cubic meters), a total length of 805 km (Azerbaijan - 442 km, Georgia - 248 km, Turkey - 113 km), and a diameter of 42 inches. Currently, its capacity is 8.8 bcm, 6.6 bcm of which are used by Turkey (Figure 1).[3][4]

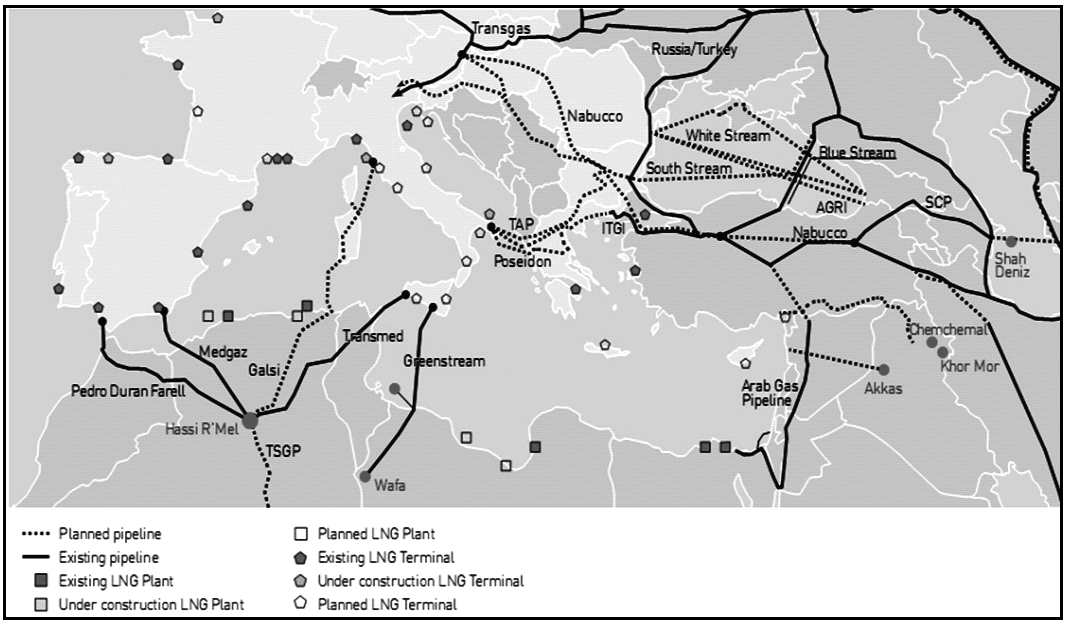
Figure 1: BTE / South Caucasus Pipeline

European countries are heavily dependent on Russian gas supplies and are working to develop alternative oil and gas sources and transportation routes. According to 2011 data, natural gas consumption in Europe reached 1.130 bcm; 442.0 bcm of this was imported and Russia's share in these imports equaled 146.0 bcm (33%).[5] The EU has launched the Inogate (Interstate Oil and Gas Transport to Europe) program in order to reduce its dependence on Russia and to diversify

[3] www.wikipedia.org/wiki/South_Caucasus_Pipeline
[4] http://www.botas.gov.tr
[5] Eurostat, Natural gas consumption statistics, http://epp.eurostat.ec.europa.eu/statistics

supply sources.[6] According to this program, routes passing through Turkey are the only possible routes for all energy sources, except for Russia and North Africa (Fig. 2).

Figure 2: Gas pipeline projects and their routes for EU[7]



Anatolia, i.e. Turkey, is called the "Fourth Main Supply Corridor" by the EU and is the only safe and economical route for gas transportation to Europe from the two largest sources in the world - the Caspian Basin and the Middle East. With the end of the work on transportation elements of the corridor (pipelines), it will be possible to deliver 80-100 bcm of gas per year to Western markets. In case political and industrial problems arise, the amount of gas can be doubled with the connection of Iranian and Iraqi natural gas sources to this route.

TANAP AND OTHER SOUTH ENERGY CORRİDOR PİPELİNE PROJECTS

Pipeline projects such as Nabucco and South Stream are a part of Southern Gas Corridor. We can make sure of it if we place all projects on a common map (Figure 3).

[6] EU, Interstate Oil & Gas Transport to Europe, www.inogate.ogr.

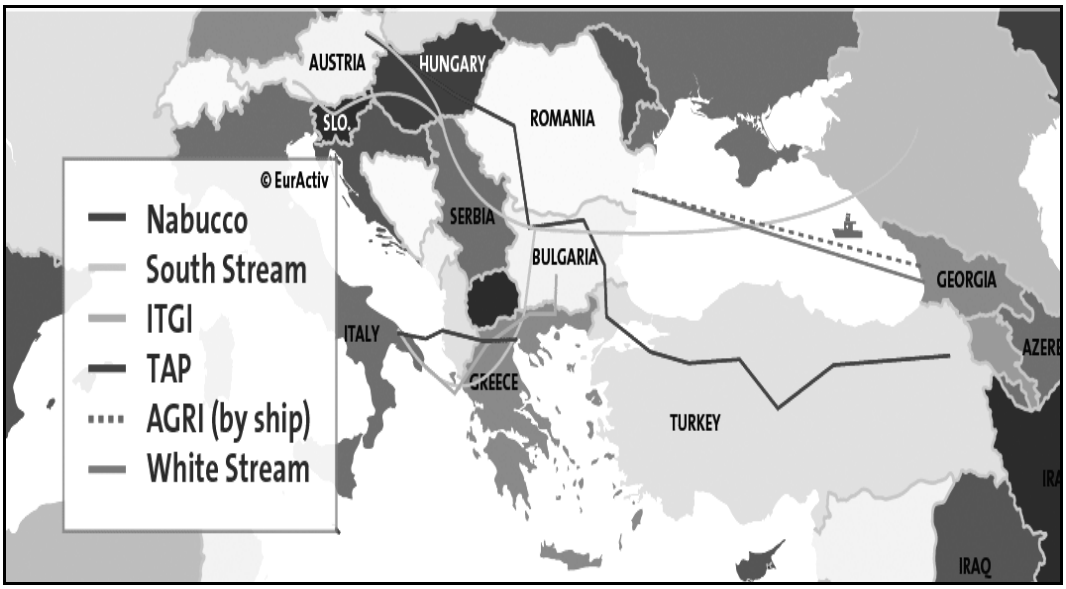
[7] OME, Mediterranean Energy Perspectives 2011

The most important factor of a pipeline project is to decide on gas source and supplier. The European Commission (EC) especially favors Azerbaijan and Turkmenistan, as well Iraq and North Africa. Given the right political conditions, Iranian and Uzbek sources can be joined to this group.

Currently, Azerbaijani gas is seen as a reliable source in the first stage of all EU "Southern Corridor" projects. Therefore, it is no exaggeration to say that not a single project can be launched through this corridor without the participation of Azerbaijani gas. However, if Azeri gas is not followed by Iranian or Iraqi gas, the project will lose its value.

Under present conditions, I feel that it is irrelevant to mention Turkmenistan as another provider country here. The issue with Turkmenistan has nothing to do with its energy resources status. At a press conference held on September 30, 2010, the country's president Gurbanguly Berdimuhamedov announced that the South Yoloten and Osman gas fields contain 18.0 trillion cubic meters and the country's total reserves are approaching 24.6 trillion cubic meters.[8] However, Turkmenistan is exporting its gas to Russia, Iran, and China while gas export to Europe depend on the Caspian corridor and construction of the trans-Caspian pipeline. An alternative route through Iran depends on Iran's policy of Western countries.

Figure 3: Southern Gas Corridor pipeline projects.



[8] EURACTIV, "Europe's southern gas corridor: The great pipeline race" , 19 October 2010, www.euractiv.com/energy/europes-southern-gas-corridor

Below is a list of pipeline projects that have been prepared to diversify EU gas sources and reduce energy dependence on Russia. The list also includes Russian projects and Russia is attempting to maintain its European market share and implement a new gas pipeline project passing through territorial waters of Turkey:[9]

- Russia – Turkey – West (14,0 bcm)
- Blue Stream (16,0 bcm)
- ITG - Turkey / Greece (at present time 750,0 mmcm, plateau volume: 3,3 bcm)
- BTE – Azerbaijan / Turkey (Shah-Deniz I) (at present: 6,6 bcm[3])
- *ITGI – Turkey / Greece / Italy project (11,3 bcm)*
- Iran - Turkey (10,0 bcm)
- *ITE – Iran / Turkey / EU project (35,0 bcm)*
- *Iraq – Turkey (16,0 bcm)*
- *Arab pipeline, Egypt / Turkey project (4,0 bcm)*
- *NABUCCO – Turkey / Bulgaria / Romania / Hungary / Austria project (31,0 bcm)*
- *South Stream Project (31,0 bcm, later - 63,0 bcm)*
- *TANAP – Trans Anatolian Pipeline Project.*

Of the above, the pipelines which will reach Europe along the East-West axis through the territory of Turkey are:

1. NABUCCO PROJECT

Nabucco negotiations began in February 2002. Project implementation works started in October of the same year as a result an equal share agreement signed by OMV (Austria), BOTAŞ (Turkey), MOL (Hungary), TRANSGAZ (Romania), and BULGARGAZ (Bulgaria). This work was carried out in the following chronological order:[10]

- 2004 – Establishment of Nabucco Gas Pipeline International GmbH;
- February 2008 – RWE joining the group as the sixth partner;
- July 2009, Ankara – signing of intergovernmental agreement (IGA);
- 2010 – Establishment of Nabucco national companies;
- 2010 – Replacement of Iranian gas with Iraqi gas
- September 2011 – Nabucco idea suggested to Shah-Deniz consortium;

[9] Written in italic – projects not yet completed.

[10] Nabucco Gas Pipeline Int. Gmbh, http://www.nabucco-pipeline.com

- May 2012 – "Nabucco West" idea suggested to Shah-Deniz consortium;
- June 2012 – Shah-Deniz consortium chooses "Nabucco West" as the route to deliver gas to central Europe.

The two fatal flaws of the original Nabucco project were the following:[11]

1.1 **Uncertainty of natural gas sources**. The project put together a managerial company but relied on third parties to sign agreements on the sale and purchase of gas to fill the pipeline. However, the partner countries of the project, the coordinator itself, Austria, and the OMV authoritative company did not effectively lobby for this project and, as a result, the companies were not able to conclude an agreement on purchase and sale of gas.

1.2 **Incomplete parts of the project**. Secondly, neither the project nor its budget took the pipelines connecting supplier countries into account. The original plan was to deliver gas from Azerbaijan, Turkmenistan, and Iran.[12] Two pipelines from Georgia and Iran would connect into a single, 56 inch in diameter line at Erzurum (Khorasan), and run for 3300 km through Bulgaria, Romania, Hungary, and finally end in Austria. Iran was replaced by Iraq as a result of the embargo imposed on Iran by the US changing the connecting point of the two pipelines to Sivas. These projects are displayed in Figure 4. In either case, there is an urgent need to establish other connections and pipelines to transport gas from the source countries.

- **Connecting to Azerbaijan.** The existing 42 inch in diameter, 780 km BTE (Baku-Tbilisi-Erzurum) line can reach a maximum capacity of 20,0 bcm with additional compressors. The scope and capability of this project is completely addictive because according to the agreements signed, Turkey will still receive 6,7 bcm of natural gas and Greece and Italy, together, will import 11,8 bcm through ITGI line. A new pipeline must be built in order to deliver gas from Azerbaijan's "Shah-Deniz II" field.

[11] Will Gas Ever Flow Through Nabucco-Eurosia Critic, April 2008 / Nabucco, 17 July 2009 / Nabucco South Stream: Whose Side is luck on?, Eurasia Critic June 2010, http://www.eurasiacritic.com/category/author/mete-goknel

[12] Nabucco Gas Pipeline International Gmbh, Status Report Q2 2009, www.nabucco-pipeline.com

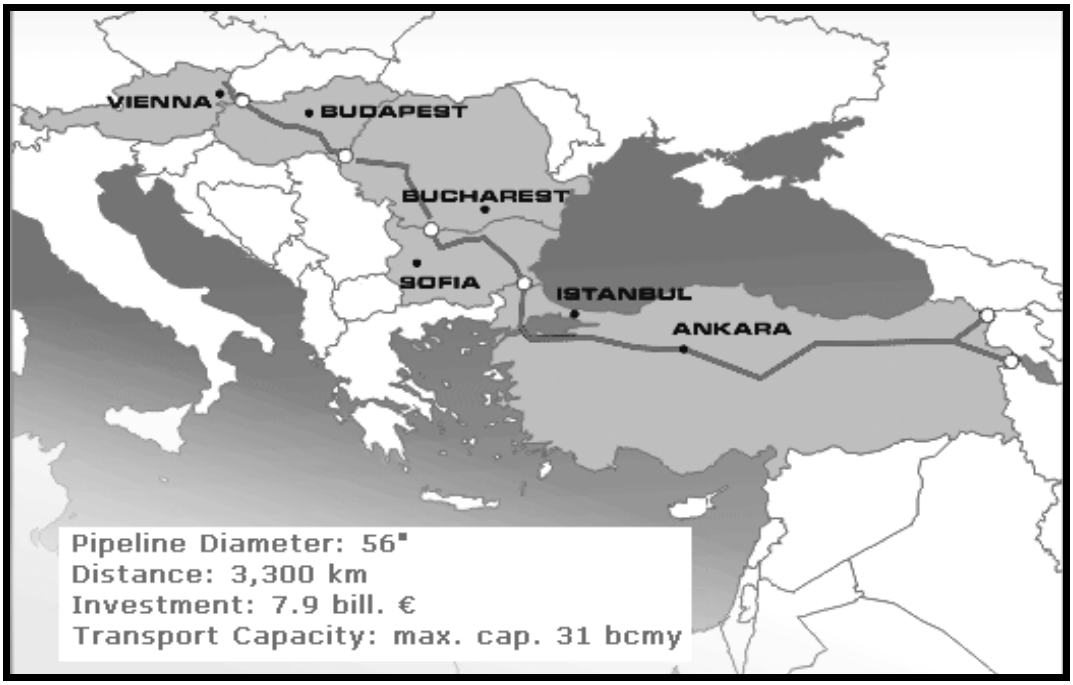
- **Connecting to Turkmenistan.** A trans-Caspian pipeline that runs for a total of 1200 km from Turkmenbashi and for 280 km along the Caspian seabed is needed. If the creation of a trans-Caspian pipeline doesn't succeed, the trans-Iranian line will have a length of 2000 km
- **Connecting to Iran. The** length of the pipeline from Iran's South Pars field to the Turkish border is 1800 km.
- **Connecting to Iraq.** The pipeline from the Iraqi fields of Al-Mansuriyah, Kahaskem-Al Ahmar, Akkas, and Siba stretches between 400 to 800 km to the Turkish border and an additional 750-800 km to Ankara (Ahiboz) or Sivas. The transport of gas from Iran (Khorasan) to Erzurum would require laying about 190 km of pipeline, but to connect Iraqi gas to pipelines in Turkey there is a need to lay about 700 km of pipeline from the Iraqi border to Sivas. However, project changes were announced without considering these costs.

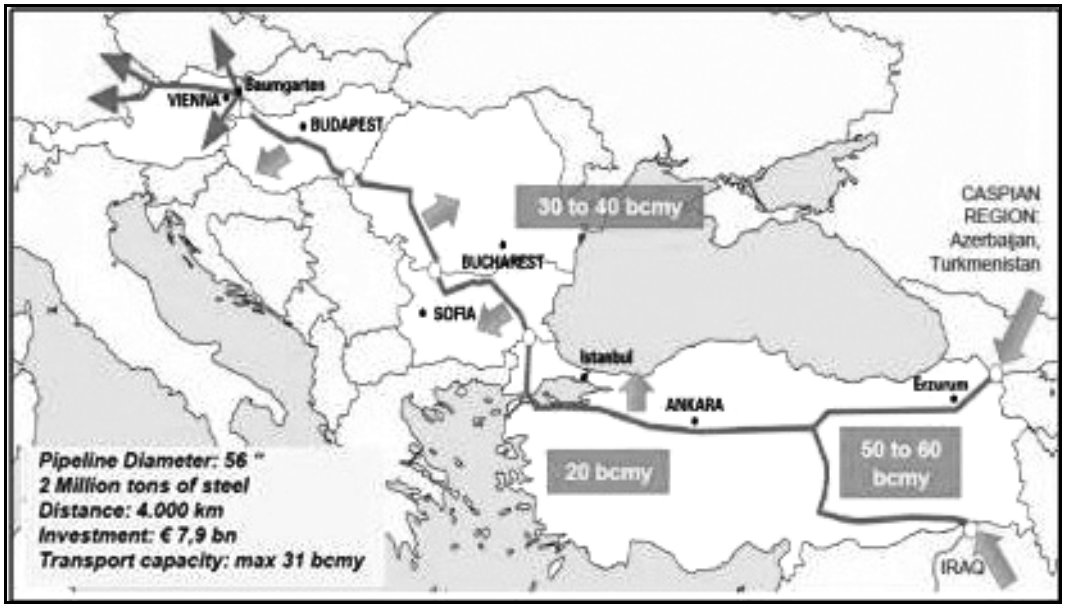
The project's most significant technical and financial weaknesses are lack of access lines for Azerbaijani, Turkmen, and Iraqi sources and uncertainty in who will finance and implement the project. Even if the sole issue revolves around filling the pipeline with only Azeri and Turkmen gas, the shortest path still takes the pipeline across the Caspian and creates a total length of about 4,500 km and a cost of about 11.0 - 12.0 billion Euros. Problems associated with deficiencies of the project and its financing have not yet been resolved

In addition to a lack of professionalism shown by the initiative's main partner (OMV) and the coordinating country (Austria), the EU Commission for Energy also did not show enough initiative within the framework of the "EU Energy Policies."[13]

[13] EU Energy Commission is responsible for EU's energy policy, including issues related to nuclear energy (Euratom). Head of the commission – Energy Commissioner is responsible for energy security of Europe, solution of gas disputes between Russia and Ukraine, reducing Europe's dependence on Russian energy and reducing carbon emissions…
http://en.wikipedia.org/wiki/European_Commissioner_for_Energy

Figure 4: Phase 1 and 2 of NABUCCO Gas Pipeline Project

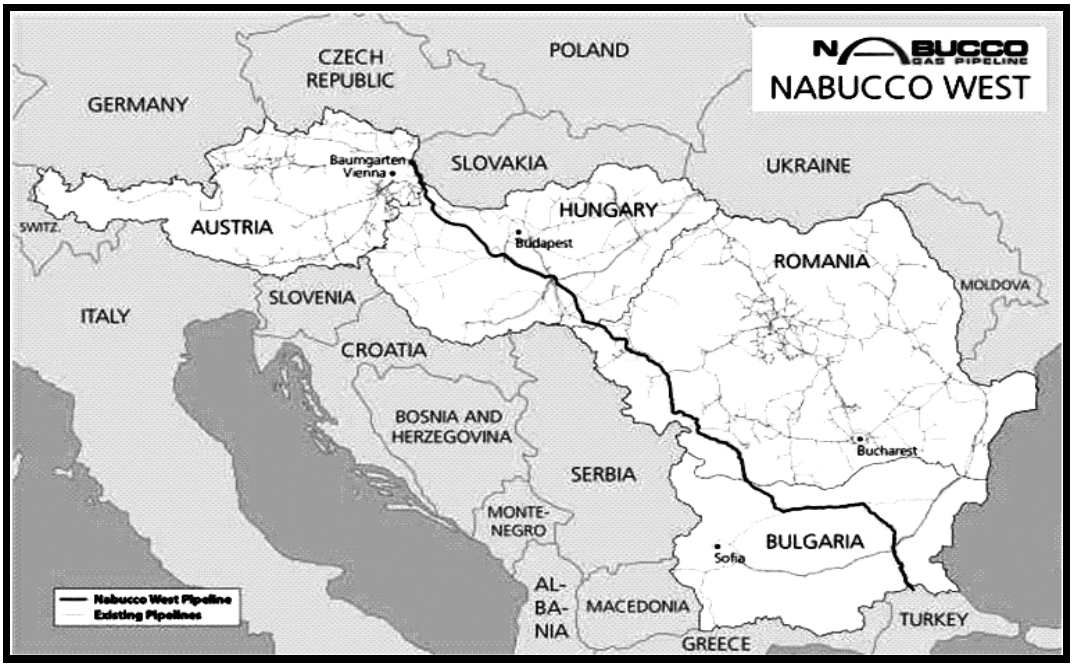




As a result of these management issues, the first Nabucco project, a pipeline stretching 3300km, with a diameter of 56 inches, capacity of 31.0 bcm, and at a cost of about 8.0 billion Euros, has turned into the less ambitious "Nabucco West" project. Nabucco West has a planned pipeline diameter of 48 inches, capacity of 10,0 to 23,0 bcm (subject to subsequent capacity growth), and length of 1300 km, and is planned to connect to TANAP (Figure 5).[14] Although the name "Nabucco" is used in the project, the project does not differ from a typical European interconnector and could be more accurately named: IBRHA-Interconnector Bulgaria, Romania, Hungary, Austria.

With the suggestion of Nabucco GmbH, members of the Shah-Deniz consortium accepted the Nabucco West pipeline as a second line that will deliver Shah-Deniz II gas to Europe along with TAP.[15] There is no sense for BOTAŞ to retain its 16.67% stake in the project because Nabucco West has little affect on Turkey. Instead, all of BOTAŞ's technical and financial resources should be invested in TANAP.

Figure 5: NABUCCO WEST pipeline project



[14] http://www.nabucco-pipeline.com/portal/page/portal/en/pipeline/overview

[15] "Shah Deniz Selects a Second Export Route Option to Europe", www.bp.com/generic article, 28 Jun 2012 – The Nabucco West project with a route running from the Turkish-Bulgarian border to Baumgarten has been selected as the single pipeline option for the potential export of Shah Deniz Stage 2 gas to Central Europe.

2. THE SOUTH STREAM PROJECT

In 2007, Russia proposed the South Stream project as an alternative to Nabucco. The proposed South Stream will pass through the Black Sea and deliver gas to southern and central European states, diversifying Russia's gas routes to Europe. The pipeline capacity is planned to be 31.0 bcm at the first stage and will then increase to 63.0 bcm (Figure 6).

South Stream will deliver Russian gas to Italy and central Europe via the Black Sea and Bulgaria. The European pipeline routes include two gas delivery routes: South (via Greece and the Adriatic Sea) and North (via Bulgaria and Hungary to Austria and northern Italy).

The pipeline will run for 923 km under the Black Sea at a depth of 2250 meters along with 1600-2540 km onshore. According to Gazprom, the offshore pipeline will cost 10.0 billion Euros, and onshore 6.5 billion Euros. Below is the chronology of the project development:[16]

- June 23 2007 – ENI and Gazprom signed the MOU agreement on pipeline construction;
- 2008 – Russia, Bulgaria, Serbia, Hungary and Greece sign an agreement on cooperation in gas pipeline construction;
- May 15 2009 – In the presence of V. Putin (Russia) and S. Berlusconi (Italy), gas companies of Russia, Italy, Bulgaria, Serbia and Greece sign an agreement on pipeline construction;
- August 6 2009 – Russia and Turkey sign a protocol on permission to lay pipeline in Turkey's exclusive economic zone (EEZ) of the Black Sea;
- 2009-2010 – Russia, Slovenia and Croatia sign an agreement on cooperation and permission to lay the pipeline;
- December 28, 2011 – Turkey gives permission to lay South Stream gas pipeline in its Black Sea exclusive economic zone;

With all necessary agreements signed, pipeline construction is scheduled to begin in 2013, gas flow is scheduled to begin by December 2015, and the pipeline should reach full capacity by 2018. [17]

[16] Europe's southern gas corridor: The great pipeline race,
http://www.euractiv.com/energy/europes-southern-gas-corridor

[17] http://en.wikipedia.org/wiki/South_Stream

However, similarly to the Nabucco project, serious problems with energy sources remain for South Stream. Although total length of the pipeline from the Black Sea coast to European markets is 3,900 km, new pipelines must be constructed to reach the Yamal and Uregoy gas fields.[18][19]

Gazprom is facing difficulties in funding, connecting, and performing its obligations under its new projects such as the North Stream (Baltic Line) and Sakhalin LNG complex due to the fact that it is trying to use gas from Caspian Sea (Azerbaijan, Turkmenistan, and Kazakhstan) to fill the South Stream.

Figure 6: South Stream pipeline route

3. TANAP PROJECT

While debates on Nabucco and South Stream continued, in late September 2010 BP, an important player in the Azerbaijani Shah-Deniz Consortium, proposed a new project: the South Eastern Europe Pipeline (SEEP).

[18] The main outlet – Anapa-Krasnodarskiy Kray

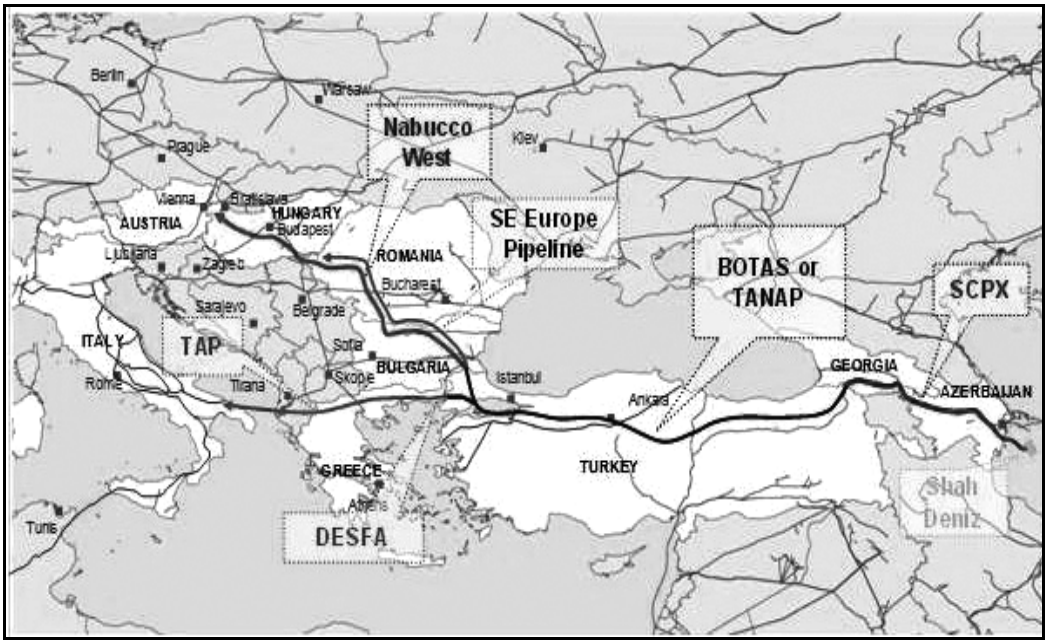
[19] EEG-East European Gas Analysis, Mikhail Korchemkin, July 2008, www.eegas.com

SEEP proposes to involve all of the pipelines passing through Anatolia (Turkey), including Nabucco, ITGI, and TAP, and has attracted the attention of Turkey and the SOCAR-led Shah-Deniz consortium.

In order to reduce the project investment cost (capex), BP suggested using BOTAŞ lines in Turkey to transport gas to Europe from Shah Deniz-II rather than building new pipelines. As the project would be relatively inexpensive, SEEP became a competitor and even a threat to Nabucco, and actually broke the existing balance of forces in the competition for pipelines between the EU and Russia and provoked a new search for solutions.

On October 25 2011 in Izmir, Turkey and Azerbaijan decided that starting in 2017-2018, 6 out of 16-24 bcm of annual gas from Shah Deniz-II, will be transferred to Turkey for its own needs with the rest going on to Europe. The agreement was the result of a series of meetings between the Turkish and Azerbaijani energy companies SOCAR, TPAO, and BOTAŞ. The right to sell gas destined for the European markets was up to the Azerbaijani side and Turkey, as a transit country, got the permission touse a part of these gas volumes. It was assumed that the existing gas transmission network owned by BOTAŞ will be used at first with new lines being built in stages (Figure 7).

Figure 7: TANAP pipeline and its European routes



Chronologically, the project was developed over the last two years:

- November 17, 2011, 3rd Black Sea forum on energy and economy (Istanbul) – SOCAR head Rovnag Abdullayev presented the decision to begin TANAP;
- December 26 2011, Ankara – Turkey and Azerbaijan signed a memorandum of understanding on joint efforts to build and operate the pipeline, giving the Trans Anatolian Pipeline (TANAP) its official status;
- April 2012 – Evaluations of the technical and economic feasibility of the project were launched;
- June 26 2012 – President of Azerbaijan Ilham Aliev and Prime Minister of Turkey R.T.Erdogan signed an intergovernmental agreement.

Similarly to NABUCCO, TANAP will deliver gas from Shah-Deniz II to both Turkey and Europe and will travel across Turkey from east to west. It will be built under joint management of SOCAR with TPAO / BOTAŞ, with SOCAR holding an 80% share and the Turkish side (TPAO and BOTAŞ) having a 20% share. SOCAR may also decide to bring in other partners into the project.

According to the latest agreement within the Shah-Deniz consortium, SOCAR will sell 29% of its stake in TANAP to its partners in the Shah-Deniz project: BP, Total, and Statoil.[20]. SOCAR will retain a 51% share, and it is not yet known how the 29% will be divided among the three western partners. This can be assessed as a good decision on the part of SOCAR and will increase international support for TANAP project.

The 16.0 bcm capacity of TANAP will be increased to 31.0 bcm by 2023. In case Turkmen gas joins Azerbaijani gas through a trans-Caspian line, new compressor stations and parallel lines will increase the total volume to 60.0 bcm. According to plan, after leaving the Anatolian peninsula TANAP will split into two lines— TAP (Trans Adriatic Pipeline), which will run to Italy via Greece and a second one, which will be directed to Austria through Bulgaria.[21] Construction of the

[20] Enerji Günlüğü, "TANAP'ta hisse paylaşımı belli oldu", 07 Eylül 2012, http://enerjigunlugu.net/

[21] Oil and Gas Conference , May 2012 / Athens, "Shah Deniz and the Opening of the Southern Corridor", Steve Garlick, Head of Caspian Gas Marketing, BP Global Gas SPU, UK

pipeline, the total length of which (excluding European connections) is 1750 km, will begin in 2014 and will be completed in 2018 at a cost of 7.0 billion USD.[22]

Unlike Nabucco, the TANAP project has more clearly defined sources of gas, buyers, owners, producers and managers.

4. ITE GAS PİPELİNE PROJECT (IRAN-TURKEY-EUROPE)

The Iranian-Turkish-European gas pipeline (ITE) project will transport Iranian and Turkmen gas to Europe via Turkey (Figure 8). On November 17, 2008, an agreement protocol on the transit of Iranian gas via Turkey was signed between the Oil Ministry of Iran and Ministry of Energy and Natural Resources of Turkey.[23]

According to the protocol, the total length of the pipeline including European connections is about 5,000 km, with 1750km going through Turkish territory. The pipe diameter equals 56 inches, operation pressure is 92 bars, and the annual gas volume delivered to Europe will have to be 35.0 bcm.

By decision of Turkish Cabinet of Ministers № 2010/882 from 26.08.2010 and according to articles 6 and 83 of the Law on Petroleum, the Turang Transit Taşımacılık A.Ş company obtained a 30 year license for the purpose of the construction of pipelines running between Bazargan, Iran and Dogubayazit, Turkey as well as between İpsala, Greece and Edirne, Turkey. Engineering work in the Turkish part of the project began on August 8, 2011, and construction is expected to begin in late 2012. The facility should be commissioned in 2015.[24]

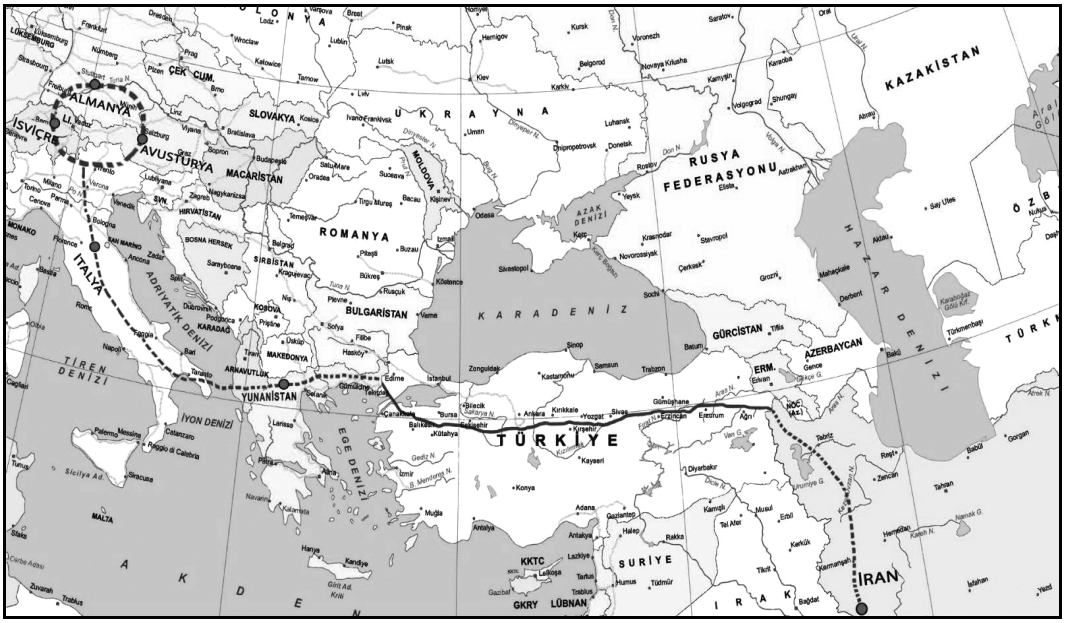
In addition to financial problems, there remain important questions that should be solved for the realization of this project. First, Iranian gas sources are not currently under production and the capacity of existing pipelines to transport gas to the Turkish border is insufficient. For example, the Iranian line of Neka-Tabriz must be developed in order to deliver Turkmen gas to Turkish border. Secondly and most importantly, Europe must give its consent to the transportation of Turkmen gas through the territory of Iran.

[22] http://en.wikipedia.org/wiki/Trans-Anatolian_gas_pipeline

[23] www.turangtransit.com/

[24] ITE Pipeline Projecthttp://ite-pipeline.com/default.aspx

Figure 8: ITE project route



5. OTHER PROJECTS, ASSOCIATED WITH NATURAL GAS

- **ITGI Turkey/Greece/Italy Naturalo Gas Pipeline:** The project is an interconnector that will deliver 3.3 bcm of Azerbaijani gas to Greece and 8.0 bcm to Italy. The first stage, Interconnector Turkey Greece (ITG), is already finished but is not yet running at full capacity. Interconnector Greece Italy (IGI), which is an elongation of the line (through the Adriatic Sea to Italy via Greece) is a project supported by Edison (Italy) and Depa (Greece). Its competitor the Trans Adriatic Pipeline (TAP) project, supported by EGL (Switzerland), Statoil (Norway), E.ON and Ruhr gas (Germany), has a greater chance of being realized. TANAP management also supports the TAP project. It is assumed that the initial pumping volumes for this project will be 10.0 bcm, and will then reach 20.0 bcm. The project plans to create an underground storage system in Albania with a capacity of 8.5 bcm.
- **Iraq-Turkey project:** According to recent estimates, reserves of Iraqi gas range from 367,0 to 627.0 bcm. Associated gas is not included in these figures (figure 3).[25][26] Along with a reserve of 1.223,30 bcm of associated gas, Iraq's total gas reserve equals 1.551,7 bcm.

[25] Katherine Hardin, Sergej Mahnovski, and Leila Benali,"Filling a Southern Gas Pipeline to Europe, Export Potential and Costs for Gas Sources Compared", IHS CERA Private Report.

Table 2: Estimated natural gas reserves of Iraq

Area	Iraq Oil Ministry	IHC-CERA		OMW
	Gas, bcm	Gas, bcm	Condensate, mt	Gas, bcm
Khor Mor	50.0	138.0	6.8	247.0
Chemchemel		99.0	3.4	282.0
Mansuriya	127.4	168.0	3.4	
Akkas	158.6	222.0	26.0	
Sibba	31.2			
Total	367.2	627.0	39.6	529.0

Nevertheless, the Iraqi government has decided that the country's natural gas reserves will not make a big impact for the West in the near future because much of production is necessary for Iraq's domestic electricity needs. Turkey's interest in the extraction of these reserves is no less than that of the West. As Turkey and Iraq are neighbors, even if it is necessary to construct a 500-700 km pipeline, Iraqi gas is the most suitable source for Turkey in the near future.

Table 3: Estimated reserves of associated gas

Natural gas reserves estimation		
	Tcf	**bcm**
Akkas*	5.6	158.6
Mansuriyah*	4.5	127.4
Kashm al-Ahmar	2.2	62.3
Siba*	1.5	42.4
Tel Gazal	0.2	5.7
Associated gas reserves		
West Qurna	13.7	387.9
Majnoon	11.8	334.2
Rumaila	9.8	277.5
Zubair	2.9	82.1
Nasiriyah	2.6	73.6
Total	**43.2**	**1,223.3**
Total	**54.8**	**1,551.7**

*production not started

[26] CIA-The World Factbook, Natural Gas Proved Reserves, www.cia.gov/library/publications/the-world-factbook/rankorder/2179rank.html

- **Interconnector AGRI: Azerbaijan–Georgia-Romania:** This is the recommended project for transporting Azerbaijani gas to the Balkans and Europe. According to the AGRI project, Azerbaijani gas will be delivered by pipeline to the Georgian Kulevi terminal, located on the Black Sea. There the gas will be liquefied at a LNG plant and then transferred to Romanian Constanta in special LNG tankers. The liquefied gas will then be converted back into gas and delivered to Europe via pipeline through Romania and Hungary. According to the project, the interconnector's capacity will be 7.0 bcm, 2.0 bcm of which will be used by Romania. Depending on its terms, the project price is in the range of 4.0-6.0 billion Euros and it will deliver Azerbaijani gas to Europe independently of Turkey, Russia, Nabucco, ITGI, or TAP.[27]

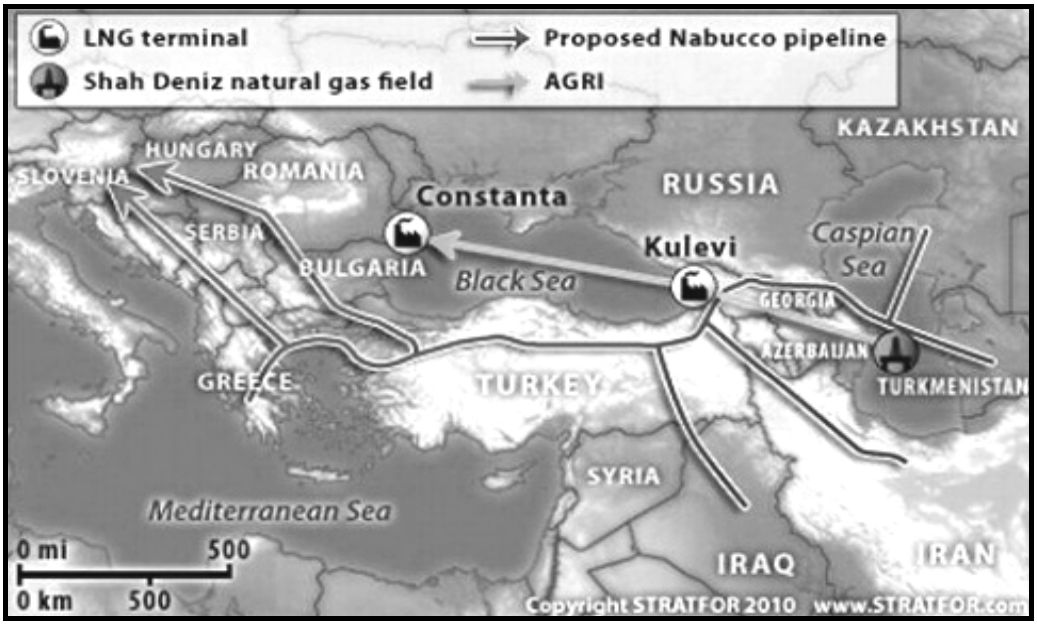
On April 13, 2010, an agreement on the establishment of the project company with headquarters in Bucharest after meetings between Azerbaijan, Romania, and Georgia ministries. AGRI LNG Co. was created through a partnership of SOCAR, Romgaz, GOGC (Georgian Oil and Gas Company), and MVM (Hungary) with a possibility for Bulgaria to participate in the project as well.

It is expected that Turkmenistan will be able to join this project as a supplier of gas, increasing the volume of gas supplied to Europe.

However, the profitability of the LNG project is questionable. Such a project will require major investments in the establishment of a liquefaction plant in Georgia, regasification plant in Romania, and specific marine transport for LNG. Such investments generate much larger operational costs than pipeline transportation, especially when the project is only designed to transport 7 bcm of gas.

[27]http://en.wikipedia.org/wiki/Azerbaijan%E2%80%93Georgia%E2%80%93Romania_Interconnector

Figure 9: AGRI project



CONCLUSION

The most convenient sources of natural gas for Europe, in terms of price and transportation, are Russia, the Caspian Basin and the Middle East. In economic and political terms, the most reliable route to deliver Azeri, Turkmen, Iranian, and Iraqi gas to the West is the territory of Turkey. There is no reason for these countries, which are united by many centuries of common history, ancestry, religion, and partly language, to not cooperate for mutual benefit.

The TANAP project has clearly identified source of gas, buyers, owners, producers, and managers and is the most promising East-West project to deliver gas to Europe

Nevertheless, TANAP is not just a pipeline, but a project that can raise Azerbaijani - Turkish relations to a new level. Geographically, Azerbaijan is landlocked and lacks access to global transportation networks. It must cooperate with its neighbors in order to be able to offer its resources to the world market. From this point of view, the Baku-Tbilisi-Ceyhan pipeline was an important first step. SOCAR investments in Turkey's petrochemical and refinery sector is very important from the standpoint of processing Azerbaijan's oil and gas resources,

delivering them to international markets, and increasing Azerbaijan's income. Due to the petrochemical plants and refineries favorably located in Aliaga (Turkey), Azerbaijan will be able to sell refined products at better prices. With its ownership of the gas, using TANAP pipeline and building a plant for ammonia/urea production, SOCAR is placing itself in a position to be a solid actor in the Mediterranean market, not only in the sale of raw products but also in the sale of finished goods.

The BTE and TANAP pipelines, refinery and petrochemical plants, and ammonia/urea production plant (planned) can serve not only the economic and social development of Azerbaijan, but also Turkey's industry and economic well-being. In this way, oil and gas production can play an important part in the development of relations between the two countries, reinforce the "one nation, two countries" principle, strengthen the Turkish-Azerbaijani alliance, and become a source of new political, economic, and if necessary, military force.

However, the implementation of other projects in the near future also guarantees serious cooperation in politics and trade, ensuring an increase in the well-being of the population in the region, and political security in a democratic regime.

CRITICAL ROLE OF CASPIAN GAS FOR ACHIEVING THE DESIRABLE ENERGY MIX IN THE EU

OR

WHY THE SOUTHERN CORRIDOR REQUIRES TWO ENTRY POINTS INTO THE EU TO REACH THE NEEDED STRATEGIC MAGNITUDE

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Director, Energy Security Studies, Western Experience for Georgia (WEG)

Diversifying energy sources, routes and counterparts remains one of the main policy priorities for Europe. We will continue our efforts to ensure a direct and sizeable access to the sources of the Caspian and Central Asian region. We ask Russia to respect our choices and the choices of the countries in the region[1]
Guenther Oettinger, April 27, 2012

1. Introduction

The Southern Gas Corridor is now perceived by all involved parties as a doable undertaking— an undertaking capable of achieving its declared strategic objectives of reliably supplying sizable quantities of gas to the European market. Thanks to progress developing the Tans-Caspian gas link within an accelerated discussion process and developments with the East-Mediterranean gas fields, the EU has strengthened its position on strategically significant supplies via the Southern Gas Corridor. The Southern Corridor has been identified as one of four European infrastructure priorities in gas and oil by 2020 (Figure 1).

[1] 2012-04-27 Oettinger speech at Eurogas Conference, Brussels http://ec.europa.eu/commission_2010-2014/oettinger/headlines/speeches/2012/04/doc/20120427.pdf

EU's attitude towards Caspian gas has been evolving over the past decade— an initial lack of political interest has gradually changed into the current multifaceted efforts to secure supply directly from the region. The EC's current resolve can be illustrated by the Energy Commissioner's January 2012 speech where he said, *"Let me emphasize: This is not shadow-boxing. We are in direct discussions with Turkmenistan to build a pipeline across the Caspian Sea, so that Turkmen gas can enter the EU. It is about 30 billion cubic meters per year! …Only if we stand together and speak with one voice, countries such as Turkmenistan are interested. That is why the Council has granted the Commission the mandate to discuss the Trans-Caspian pipeline on behalf of the EU."*[2] The Energy Commissioner makes the magnitude of the deal with Turkmenistan clear (that is in addition to comparable supply volumes expected from Azerbaijan) and sets EU unity as a condition for success. The mandate granted to the EC by the Member States is the first in the history of the EU and reflects greater trust in a coordinated, centralized policy by EU member states.

[2] Guenther Oettinger, January 24, 2012 http://ec.europa.eu/commission_2010-2014/oettinger/headlines/speeches/2012/01/doc/20120124.pdf

Figure 1. European Infrustructure priorities (sourse: European Commission 2011)

Just few years ago, EU officials could only speak about an EU 'willingness' to help Caspian States in developing their resources, rather than mutual interests and potential mutual benefit. Energy co-operation was mainly focused on regional co-operation within the EU's INOGATE program, which was designed as a catalyst for infrastructure improvement and investment throughout INOGATE beneficiary countries, but not for the establishment of large-scale trade with the EU.

There was no agreement within the EU on the importance of diversification of its supply sources particularly via direct, non-Russian routes from the Caspian region. There were also differences of views on whether Turkmenistan would be willing to supply gas and whether Azerbaijan would support Turkmen gas crossing its territory. Without firm positive answers to these, as well as many other related questions, the European Commission remained undecided. The evolution of the EU attitude towards proactive position on Caspian gas accelerated after Georgia-Russia war of 2008 and especially since Gunther Oettinger took office in February 2010. At the same time, the EU accelerated working on new, centralized energy policy instruments (particularly in relation to EU Member States' dealings with non-EU countries) and taking steps towards the creation of the single gas and electricity market. The European Commission has proposed a new funding plan to speed up long-term investments in infrastructure, including outside gas supply pipelines. The plan includes a €9 billion fund that would be used to encourage private and public investors to help finance energy infrastructure projects within and outside the EU beginning from 2014. One of the major goals of the plan is to stimulate development of Southern Gas Corridor projects and create a large Caspian gas trade.

The attitude of energy rich Caspian states, unlike that of the EU, has been persistent in searching for ways to establish a maximal energy trade with the west from the very moment of the dissolution of the Soviet Union. Energy trade, from the very beginning, was seen as an important part of state-building and national security for the newly independent states. While with US help, these states were successful in implementing oil outlets to the west, it was not the same with gas projects. Attempts to build the Trans-Caspian pipeline (TCGP) in late 90s were unsuccessful and Nabucco has been struggling to gain traction for a

decade despite considerable effort and funds spent on planning, studies, and negotiations. Whether for the upstream or midstream infrastructure, these projects have not been developing at the pace of existing commercial or technical potential. Many of the factors hindering development are now much better understood. The lessons of the past have been analyzed, many of the solutions have been designed, and preconditions for implementing all necessary risk reduction components are now developed. All this gives greater confidence that the objectives of the Southern Corridor plan can be timely materialized.

2. Background

The first serious attempt to build gas pipeline access to the Caspian and Caucasus began in mid-90s. At one point progress, stimulated by the US, was even more advanced than the concurrently developed oil transportation project, the Baku-Tbilisi-Ceyhan. However, the sudden emergence of the Russian-Turkish Blue Stream pipeline project played a critical role in stalling the Trans-Caspian pipeline idea. Gazprom was well informed about the true magnitude of Turkmen deposits and therefore had a clear understanding of the impact on Russia if abundant but less expensive Caspian gas reached the EU through non-Gazprom controlled pipelines. Experts in the EU were mostly unaware of this potential and even after 2006 gas supply interruptions most strategic planners put Caspian, especially Turkmen, gas into the basket of the Russian supply corridor. Russia was successful in preventing TCGP by striking a 16 billion cubic meter per year (bcma) Blue Stream deal with Turkey. As Robert Cutler has described: *"The goal of Blue Stream .. was to prevent construction of the Trans-Caspian Gas Pipeline."*[3]

The potential of Azerbaijani gas has also been more favorably assessed in recent years and exporting 30-35 bcm annually from 2025 is now widely seen as realistic. Turkmenistan has invited reputable Western consultants to verify the magnitude of its reserves, and despite Russia's constant attempts to put them in doubt, it is no longer an issue that Turkmenistan might not have enough gas to supply the EU even if it further increases its supply to China and develops a route towards Pakistani and Indian markets.

[3] 2012-04-26 Robert Cutler, Asia Times,
http://www.atimes.com/atimes/Central_Asia/ND26Ag01.html

It is now widely accepted that gas reserves in the Caspian region are comparable to Russia's reserves in West Siberia and that Caspian gas delivered to the EU will be competitive with gas delivered from Russia. There is little doubt that the recoverable reserves of these two Caspian countries alone exceeds 30 trillion cubic meters (tcm); meaning that Azerbaijan and Turkmenistan can easily supply 100 billion cubic meters per year to each of four directions—EU, China, Pakistan-India, and Russia— for fifty years. More importantly, the highly advertised doubts that either Turkmenistan might not be interested in establishing strategic gas trade with the EU or Azerbaijan might be unhappy to provide access for Turkmen gas to the EU markets, have now been dismissed.

Indeed, the potential and the role of Caspian gas for the future development of the EU energy market was, for a long time, underestimated by policymakers. Brendan Devlin for the EU and Matthew Bryza in the US pioneered the vision of the independent, Fourth Gas Supply Corridor to bring Caspian and Middle-East gas to the EU via the South-East Europe. This early vision developed into the current multi-component 'Southern Gas Corridor' plan attempted to manage risk through the concurrent development of routes through Turkey and across the Black Sea, has justified the need for EU common diplomacy and considerable public funds through the concept that securing diversification is a public good and has taken specific Turkmen interests into consideration (substantial upfront commitments/guarantees on sale of large strategically significant volumes).

In order to meet the above Turkmen requirement on secured sales, the European Commission suggested to create a Caspian Development Corporation (CDC) within its second Strategic Energy Review. The CDC, equipped with the ability to aggregate gas demand from European buyers, can serve as a desirable single client for Turkmen gas. The existence of such creditworthy counterpart is meant to contribute towards upstream gas development and related transportation infrastructure. In relation to the needed reduction of transportation risks, the EC enhanced its support to the Nabucco project and has begun co-funding the cross-Black Sea White Stream project studies. As Commissioner Piebalgs stated in Ashgabat back in 2007: "*The European Commission is fostering, in cooperation with its partners, a trans-Caspian* ***trans-Black Sea*** *energy corridor. Feasibility studies will be completed before the end of the year and will examine several technical options for* ***additional gas exports*** *towards the EU."*[4] The cross-Black Sea route, if developed

[4] 2007-11-15 Commissioner Andris Piebalgs speech in Turkmenistan
http://europa.eu/rapid/press-release_SPEECH-07-720_en.htm

in parallel with the main transportation route via Turkey, would dramatically reduce the perceived transportation risks for all parties involved. Developments with these important additional components of the Southern Corridor have started, but …

The economic recession has affected EU energy consumption and has flattened gas demand. This has affected the 'immediate drive' for Caspian gas within the EU Member States (MS). This, along with the strengthened belief that a fast and easy breakthrough with the Nabucco pipeline is possible (especially after signing of the Intergovernmental Agreement in 2009), has reduced the focus on other components of the Southern Gas Corridor. Valuable time has been lost. Meanwhile new factors have become important including technological achievements and renewable subsidies that have resulted in a significant reconfiguration of the market and have demonstrated (particularly in Germany) that the growth of gas consumption is not the only possible scenario.

3. Why the access to Caspian gas, is a key issue for the EU

Commissioner Oettinger stated in his speech in Cologne on September 8, 2011: "Access to Caspian gas is a key issue for the EU."[5] There are strong reasons for this.

Gas is valued for its technological flexibility in working in combination with renewable energy, as well as for its relatively low CO2 contribution in comparison with coal (about 50%). Coal, for example, is currently used to generate about 43% of electricity in Germany. Gas could substitute coal and other high CO2 emitting fuels in electricity generation and would help the EU to achieve its climate change objectives without incurring great costs to the economy. Gas is also a suitable choice to substitute nuclear power in harmony with renewables if the role of nuclear energy in the European energy balance decreases.

A problematic question remains whether relaying on gas also means an increased EU dependence on supplies from Gazprom and high energy prices. About half of current gas imports come from Russia and internal production as well as the

[5] http://www.dw-world.de/dw/article/0,,15381491,00.html Speech, Guenther Oettinger, Cologne September 8, 2011

North Sea supplies are predicted to continue decreasing. In some EU countries, the dependence is almost 100%.

EU countries traditionally pay high prices for gas. Prices for Russian gas are unjustifiably high and drive MSs to heavily subsidize renewables and continue with a CO2 pricing policy that promotes expansion of currently more economical coal fired power plants (modern coal plants may have sufficient technological flexibility for rapid change of output), while gas consumption is declining.

Certain relief from Russian gas comes from increasing the import of liquefied natural gas (LNG) and there is even the expectation that LNG from the US could start coming to the EU in the next decade. However, LNG has its own risks. The LNG market is considered more volatile and prices might not be stable in the long run. Price stability is a major issue when it comes to replacing coal, the gasification of 'virgin' regions, and the wider use of natural gas in transportation. Another issue is that gas burned for liquefaction diminishes the benefits of gas as a cleaner fuel in terms of greenhouse gas (GHG) emission.

The shale gas that entirely changed the structure of the US market also has great prospects within the EU, but production is not expected to reach significant volumes in the near future to be priced competitively EU-wide.

The prospects of increased LNG import and shale gas production are positive factors that will support industry relaying on gas, but it is the perception of the reliability of the pipeline gas supply that will continue to drive wide usage of natural gas. **The EU has focused on the diversification of pipeline gas (in terms of supply sources, routes, partners) in the pursuit of securing proper circumstances for the next two-three decades of gas use.** Carbon Capture and Storage would allow a further increase of lifespan for gas era for power generation**.**

The best possibilities for diversification depend upon the success of the Southern Gas Corridor. The EU is surrounded by the world's biggest reserves of natural gas, and while there are objectively prohibitive problems with some of the sources, Azerbaijan and Turkmenistan are well suited for pipeline supply and could have begun cost-effective, price-competitive gas delivery to the EU several years ago.

With a 'sizable' supply of pipeline gas from the Caspian, the EU could afford to begin replacing coal with gas and achieve a CO2 reduction in the optimal way.

Otherwise, the EU may further accelerate use of renewables and coal, a combination that may be more expensive but will not be subject to supply risks. The 'sizable' supply will certainly require the opening of the Trans-Caspian Gas Pipeline with significant capacity.

The size of the gas market in Europe can even be expected to grow with the implementation of the Southern Corridor because if supply is properly diversified, the positive features of gas will not be counterbalanced by negative political connotations currently attached to gas. A bigger gas market will also mean a greater segment for non-pipeline supplies from Qatar and other sources in absolute figures.

Russia, holding large reserves for its own production and a far better developed supply infrastructure, will continue to remain the largest energy supplier to much of the Europe in the foreseeable future. The European Commission's attitude that gas supplies from Russia and the Caspian will supplement each other is illustrated in figure 2.

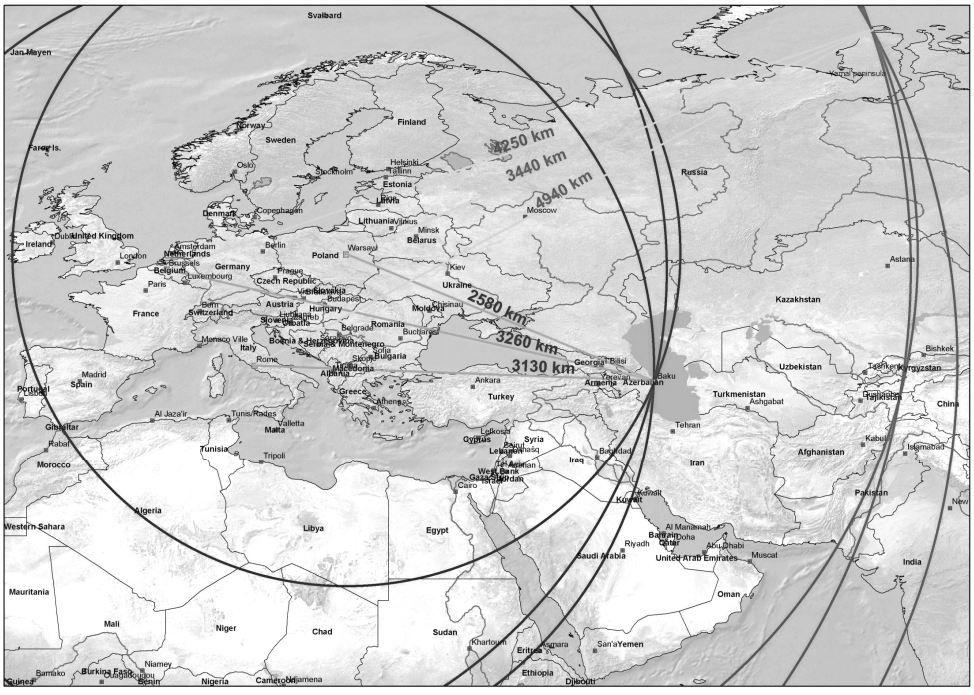

Figure 2. Europe's gas supplies from Russia and the Caspian will supplement each other. Source: European Commission, DG ENERGY

4. The "Strategic" Southern Corridor

The EU strategy document *Energy infrastructure priorities for 2020 and beyond* (17 November 2010) outlines the parameters of the Southern Gas Corridor as *"the strategic objective of the corridor is to achieve a supply route to the EU of roughly 10-20% of EU gas demand by 2020."*[6]

The above vision allows for the term "Strategic Southern Gas Corridor" while referring to a Southern Gas Corridor that is sufficiently large to comply with the objectives of EU's gas supply diversification and energy security needs. The Strategic Southern Gas Corridor is thus different from a possible smaller scale project to bring Shah Deniz phase II gas from Azerbaijan to Europe (although such smaller projects may form significant first steps toward large-scale Caspian gas exports to Europe).

The sanctioning of Shah Deniz phase II has been postponed several times in the past, but its development appears to be on track now. An agreement has been reached on sale of 6 bcma to Turkey and the transit of 10 bcma via Turkey towards Europe. TANAP agreements makes it likely that that investment decisions on Shah Deniz phase 2 will not be further postponed and Azeri gas will reach the EU possibly even by 2017. However, unless it can help trigger further development in the Caspian, such relatively small quantities (10 bcma) will bear little significance for the EU gas market as a whole. Nevertheless, energy security in SEE is among the most urgent matters and a diversification of gas supply in this region would benefit the local economy and boost gas consumption.

The EU's original interest was to create the Southern Gas Corridor through a large capacity project with a single legal regime stretching from the Caspian up to the EU border. However, the envisioned Nabucco project failed to align interests (Nabucco "alone" could provide only limited alignment, not sufficient for triggering Turkmen supply).

The limited production capacity that Caspian investors have developed so far is a reflection of the perceived difficultness in implementing and stably utilizing westward transportation infrastructure and not a reflection of scarcity of reserves or the lack of desire to trade with the EU directly. Agreements covering large-scale supply, transport and offtake that will open the market for strategic

[6] http://www.energy.eu/directives/com-2010-0677_en.pdf 'Energy infrastructure priorities for 2020'

volumes of Caspian gas exports to Europe over the long-term are yet to be concluded.

EC's hopes about deeper diversification of EU gas supplies are not shared by everyone. Skepticism remains about the central point: the Southern Gas Corridor's capability to reach strategically significant supply volumes and thus substantially affect the diversification of EU gas supply. Reuters has quoted the January 2012 report from the Oxford Institute for Energy Studies: "*But whichever pipelines get built…. non-Russian gas supplies to Europe will still be dwarfed by Russia's gas flows. Russian exports currently around 150 bcm a year could reach a maximum of 230 bcm by 2017, ... In its lowest scenario, Russian exports to Europe would still be around 100 bcm a year. This compares with a maximum of less than 30 bcm a year which Europe is likely to receive from Azerbaijan and the Caspian region.*"[7] It is worthwhile to note, that why the Southern Gas Corridor cannot reach bigger volumes has never been substantiated.

The timing for implementation of the SGC is extremely important as the SGC might lose its relevance if EU energy development plans will not be able to take it into account in the near future. Europe's inevitable energy infrastructure revolution will involve investing billions in the coming decade and cannot be neutral to the SGC. The failure to develop the SGC will have a negative effect on the EU's energy structure, but the EU will be able to mitigate the problems by taking a more aggressive stance on renewables, coal and shale. The result of such development will be irreversible for Caspian gas. Among the parties that will lose out will be Russia and Turkey. Russia, because decreasing gas demand in the EU will also cause shrinking sales for Russia and Turkey will suffer from less gas flowing across its territory. Azerbaijan will largely lose its EU market opportunities.

The evolution of Nabucco project which has now been substituted with a smaller and shorter version of Nabucco-West was reported as a failure of the EU diversification policy in the international media and the Financial Times even stated that the TANAP deal "marked the end of the road for a long-standing European plan … to reduce the Continent's dependence on Russian imports."

However, the original concept of Nabucco is not necessarily dead even if Nabucco is not implemented starting from Georgian-Turkish border as first

[7] 2012-01-13 Reuters. Turkey to gain in Europe gas pipeline race

proposed (this initial version is now dubbed as 'Nabucco Classic'). The concept can and should be still implemented under proper agreements bringing Nabucco-West and TANAP under the single legal umbrella. However, these two projects are hardly sufficient unless other components of the Southern Corridor start to develop concurrently.

Focused on competition among projects going through Turkey, the media frequently identified the Southern Gas Corridor as merely a synonym of Nabucco. When the Nabucco IGA was signed the prospects of a breakthrough looked very realistic. Nabucco, offered a strong start to the SGC, adequate for both gas produced by Shah Deniz and initial Turkmen supplies. However, not unexpectedly, Turkmenistan has not shown any enthusiasm about supplying 10 bcma to Nabucco without a workable scheme to expand supply. The Turkmen vision has always been at least a 30 or 40 bcma deal that would provide the necessary revenue to fit their own gas export policy and risk aggravating relations with an already displeased Russia. Confidence in a future expansion of capacity was not sufficiently strong given the possibility of endless wrangling over rights to cross Turkey.

To bring Turkmenistan on board, in addition to continuing support for Nabucco, the EU has increased its support for a more complex Southern Corridor plan that includes internal diversification of the Southern Corridor on Georgia-EU section and a larger scale TCGP to achieve a better alignment of interests. "We are talking about 30bcma with Turkmenistan," Oettinger said clearly in January.

5. How to align interests— Two entry points for Caspian gas into the EU market (diversification within the Southern Corridor).

Azerbaijan's strategic objective is to achieve the largest possible gas export to the EU, no less than 30-35 bcma in the short to medium term (next 10 to 15 years). The same aim is held by Turkmenistan, which has started work on a 30 bcma capacity East-West pipeline to make gas available for westbound transportation from its giant Galkynysh fields by 2015. Turkmenistan also has addition volumes that are already available from its offshore fields and often mentions a figure of 40 bcma in relation to prospects of gas export to the EU.

The EU's aim is consistent and fully aligned with those of the major Caspian gas producer countries. EU officials usually mention a figure of 100 bcma as a target of the Southern Corridor.

Countries with no access to open seas, such as Azerbaijan and Turkmenistan, aim for greater stability and predictability in relations with offtakers. This is the key reason behind their determination to seek a strategic gas trade within the European market (the EU market is certainly unique specifically from this point of view in addition to its superior commercial attractiveness). Obviously, any such assessment of predictability of off-take requires consideration of the risks associated with transit arrangements and the motives of transit countries.

SGC skeptics have questioned Azerbaijan's willingness to act as a transit country for Turkmen gas due to possibly issues of competition for buyers. However, considering EU's determination for creating a well-connected single gas market, the likelihood for any detrimental competition appears to be merely theoretical in the medium and long term. If broader geopolitical factors are taken in account, opportunities for very substantial synergy and political risk reduction would explain why it is in Azerbaijan's interest to also serve as a transit country for the largest possible volumes of gas to the EU. This idea was confirmed by Azerbaijani officials on multiple occasions.

There were even more extensive discussions on how Turkey would see its role. Despite the fact that Turkey is not the only suitable non-Russian route for Caspian gas (gas can be transported by a cross-Black sea pipeline from Georgia directly to the EU countries on commercially viable terms),[8] Turkey is a key transit country. Turkey is a strong and respected power in the region and it is in the interest of all parties for Turkey to comprehensively participate on strategic gas transportation matters.

Aligning interests with Turkey was not a straightforward task for Nabucco. Despite the IGA signed in 2009, Turkey was still considering options that could sustain at least a gradual surrendering of control over the build-up of gas volumes, such as by supporting ITGI.

But, a key reason, why Nabucco failed to secure Turkmen gas and benefit from existing broad 'alignment of interests' between the EU, Azerbaijan and

[8] 2008-02 FT. Ed Crooks=Turkey pressed for support on gas scheme.
http://www.ft.com/cms/s/0/7e4a0b0e-d844-11dc-98f7-0000779fd2ac.html

Turkmenistan, was the underestimation of Turkmenistan's seriousness concerning "minimum volumes" requirements.

Turkmenistan repeatedly highlighted that it would not be interested in any arrangement that was not large enough to make strategic sense. Turkmenistan showed no eagerness to help Nabucco on the basis of 10 bcma export capacity unless there was clear evidence of a future increase to volumes of 30 bcma or even more. The Turkmen government has consistently maintained that Ashgabat is ready to guarantee the supply of up to 40 bcm of gas per year to the European market. During the 90s, the failure of the TCGP was similarly caused by an underestimation of Turkmenistan's desire for large-scale gas exports. Turkey's interest in the purchase of the previously discussed 30 bcma of Turkmen gas for its own needs and re-export to the EU quickly disappeared after agreeing with Gazprom on a major supply increase and the construction of the Blue Stream subsea pipeline.

The European Commission introduced the concept of a Caspian Development Corporation (CDC) as an important component of the SGC with the support of the World Bank. The concept is intended to develop into a commercial vehicle to assume risks and provide sufficient guarantees to Turkmenistan that gas volumes will be lifted and that contracts will be honored.

Achieving export capacities beyond 30 bcma would most certainly require more than one, and probably several parallel pipeline projects to be gradually implemented. A common sense approach could have been to agree on a binding and enforceable single legal regime framework from the Caspian to the EU via routes across Turkey and the Black Sea without setting limitations on volumes (or at least up to a reasonable level corresponding to the required large scale investments in the upstream). This would have created a dramatically different scenario for Caspian developments and dozens of bcm could have already flowed to the west. Because transit countries instinctively want to avoid such framework agreements to satisfy their desire to reap bigger benefits through a "salami slicing" approach, agreements must be counterbalanced by a broader approach seeking *'win-win'* opportunities related to sharing a *'bigger cake'*. The Energy Community Treaty could offer an advantageous legal framework in this relation and it is remarkable that Commissioner Oettinger has spoken recently about renewed efforts to bring Turkey and Georgia into the energy community.

The scale of the SGC development is such that large private funds will need to be available. This will require a clear understanding of the interest alignment

between producers, consumers, and also transit countries within the investment community.

Turkey is a natural and essential transit country for Caspian, as well as Middle East gas traveling to the EU and has a vital interest in playing this role. Another vital interest for Turkey is to meet its quickly expanding gas demand. Turkey is strategically aligned with Russia in energy and other sectors. Although this alignment should not be overestimated and may not strengthen further, the deployment of very large capital investments, both in upstream and transport infrastructure, will require firmer confidence in relation to transit. The same applies to the perception of risks by the producing and consuming countries. Several projects will be needed for the Southern Corridor to fulfill its strategic role, and the parties concerned should look to take advantage of all available diversification options within the Southern Corridor to ensure the most effective critical alignment of interests and therefore accelerate investment in upstream and TCGP (Figure 3).

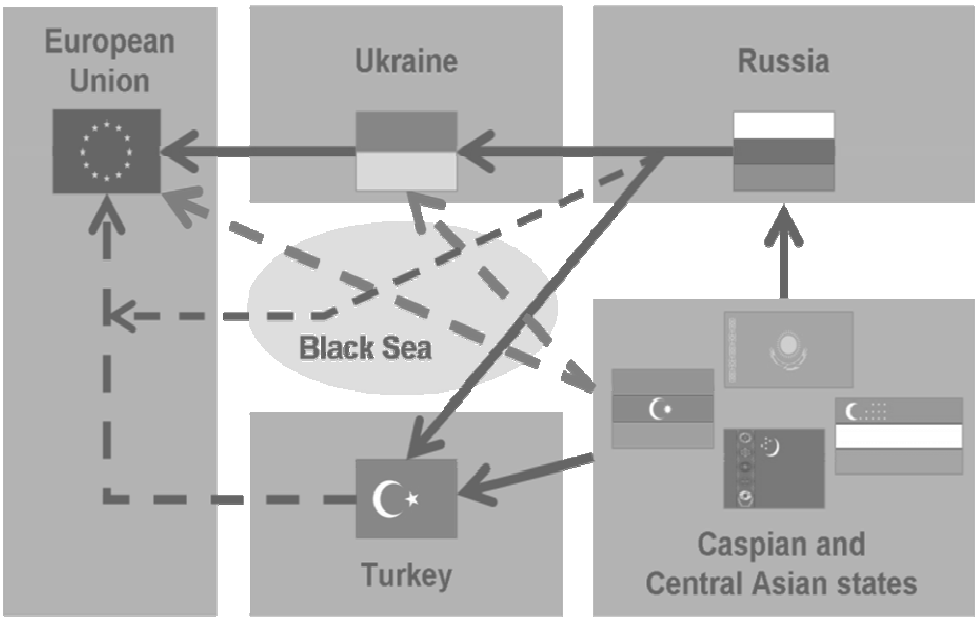

Figure 3. Taking advantage of available diversification options within the Southern Corridor will be the most effective way to ensure a critical alignment of all interests and therefore acceleration of investments in upstream and TCGP. Source: White Stream Consortium.

The Southern Corridor will benefit from route diversification including the terrestrial route through Turkey, and the route across the Black. These two main routes are not in competition with each other; rather together they help reduce the perceived geopolitical risks.

The synergy concept was first illustrated in a 2009 report of then-EU Southern Corridor coordinator Mr. van Aartsen.[9] The report suggested that White Stream would create a synergy with projects via Turkey and justifies the need for the concurrent development of both transportation routes.

A 2010 study commissioned by DG ENER to evaluate the trans-European energy network policy (TEN-E) has emphasized the complementarity of Nabucco and White Stream (i.e. Turkish and cross-Black Sea routes): "It should be stressed that the two …projects [Nabucco and the White Stream] have often been presented as two alternative options. However, given the political scale and their impact, they are included in the table …as complementary projects."[10] Figure 4 illustrates complementary routes within the Southern Corridor plan versus competing South Stream plans.

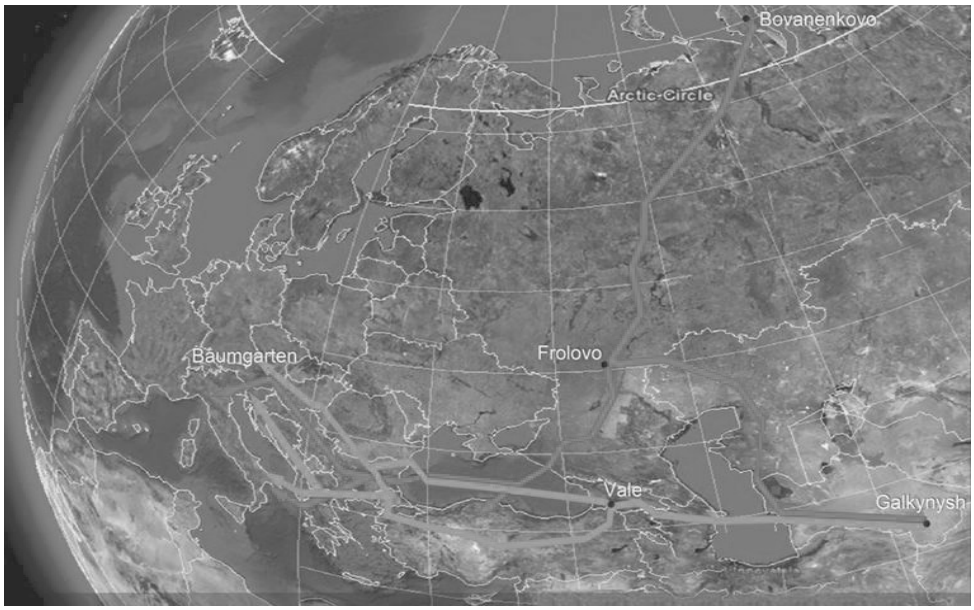

Figure 4 Turkey/Black Sea route synergy vs. South Stream's 'competing' Central Asian plans. Source: White Stream consortium

[9] Van Aartsen, *Activity Report*, European Commission, Brussels, Sep 2007 – Jan 2009. http://ec.europa.eu/energy/infrastructure/tent_e/doc/axis/2009_axis_linking_activity_report_2007_2009.pdf

[10] http://ec.europa.eu/energy/infrastructure/studies/doc/2010_11_ten_e_revision.pdf

The European Commission's communication, "Energy infrastructure priorities for 2020 - A Blueprint for an integrated European energy network," refers to White Stream as a project under development along with other Southern Corridor projects. **It also underlines the concept of two entry points in relation to Caspian gas, stating, "The key transit state is Turkey, with other transit routes being through the Black Sea and the Eastern Mediterranean."**

The strategic development scheme is provided on the EC slide above (Figure 1) outlining the complementary routes, not particular projects serving one route or another. A similar picture of two entry points is provided in the study prepared by CERA for the European Commission, the World Bank, and European Investment Bank (The Caspian Development Corporation, final implementation report - Figure 5).[11]

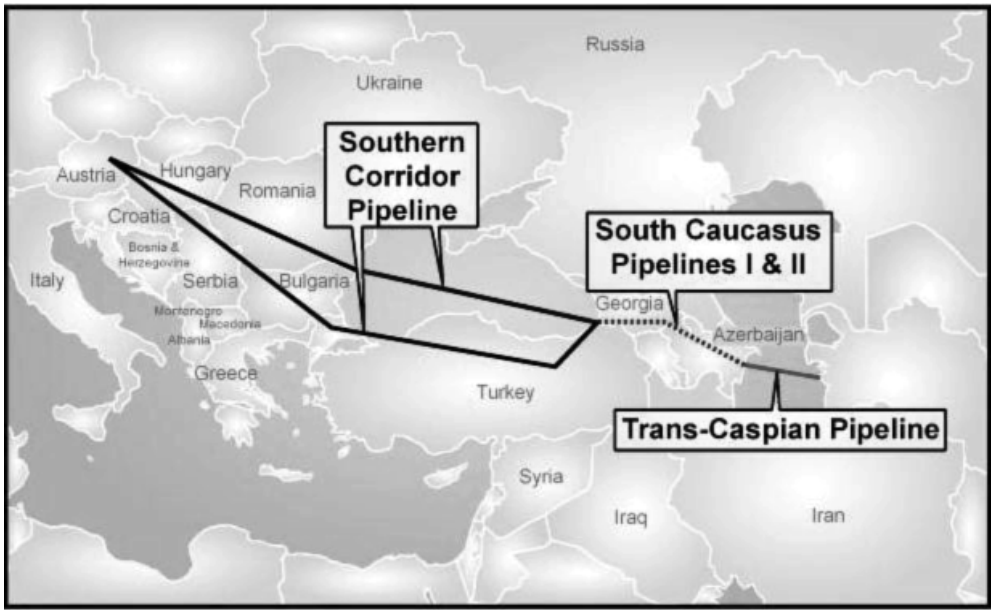

Figure 5. Source: IHS CERA, final implementation report - Caspian Development Corporation (Figure 3-7, December 2010)

[11] http://ec.europa.eu/energy/infrastructure/studies/doc/2010_12_report_cdc_final_implementation.pdf

Last summer, NewsBase said that the two-entry point plan might serve to break the vicious circle that has stymied Caspian gas development for more than a decade. It adds clarity to the emerging picture of the EU's future gas needs.[12]

Until recently, the White Stream pipeline project, that EU has designated as an EU Priority Project of Common Interest in 2008 was the only project to take gas from Georgia to the EU across the Black Sea. White Stream developers have succeeded in establishing the project concept, have verified its technical and legal viability and have proven its commercial attractiveness. The ultra-deep water, super high-pressure technology, initially developed for the Blue Stream pipeline, has been proven to be economical, reliable, and environmentally friendly. It is important to note, that transportation economics are comparable between the overland Turkish route or via a cross-Black Sea pipeline from Georgia to Constanta. The comparable commercial viability of these routes ascertains and underpins synergy between these two entry points. At a later stage, a separate White Stream pipeline is envisaged to land in Crimea, Ukraine (Figure 6).

White Stream was not designed to compete with projects via Turkey or for targeting gas from the Shah Deniz field. For some time there has been widespread misunderstanding about the specifics of the Southern Corridor concept with commentators focusing too much on the mood of competition and frequently depicting White Stream as just another Nabucco competitor, rather than a project that is complementary to terrestrial routes via Turkey as clearly described in a number of EU documents.

It is also noteworthy that other competing, non-pipeline projects have emerged to take gas across the Black Sea. Examples include the AGRI, a LNG project taking gas from Georgia to Romania, and a project aiming to utilize the new, untested CNG technology to transport gas from Georgia to Bulgaria. Feasibility studies for these projects are underway and, depending on circumstances, they might find a role to play in smaller scale gas transportation. Although, the SGC strategic aims cannot be adequately met by small-scale transportation options using CNG or LNG, the interest in exploring additional trans-Black Sea options further confirms the key complementary role of the Black Sea crossing.

[12] 2011-07-27 R. White. COMMENTARY. NewsBase . FSU OGM 27 July 2011, Week 29 pages 5-7. Gas alternatives for Europe

Two separate routes will provide 'two entry points' for Caspian gas into Europe via the Southern Corridor. The delay with the main route via Turkey was hindering the development of the White Stream pipeline.

The implementation of the first 'entry point' via Turkey has now successfully started with recent breakthrough on TANAP agreements; Firm dates of completion of TANAP are set. This is a timely boost for the development of the of Black Sea crossing. The prospect of more rapid development of the White Stream pipeline has also been enhanced by the recent initiation of direct negotiations on TCGP and expected start of commercial production on the gigantic Galkynysh field in Turkmenistan. The approval of the EIA for the South Stream cross-Black Sea project by Turkish authorities in December of 2011 is a further positive development for the White Stream pipeline, which will follow a similar route across the Turkish exclusive economic zone (EEZ)

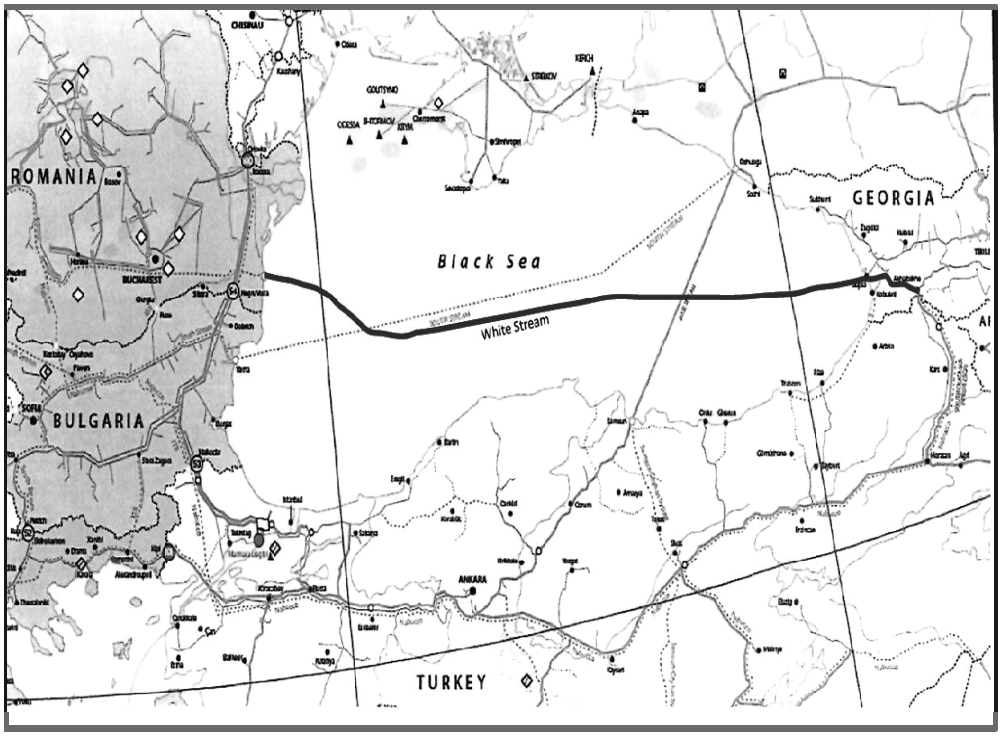

Figure 6. First string of White Stream - Georgia to Constanta. Source: White Stream consortium.

6. Positive developments within the EU

The European Commission is taking a broad set of initiatives that will further facilitate the realization of the SGC. SGC will benefit from strengthening and consolidating the electricity and gas markets in the EU, strengthening common energy policy internally, and creating coordination instruments for its energy relations outside of the EU.

In September 2011, the EC announced significant steps in the direction of Europeanization of energy policies, centralized oversight of MS' energy deals with players outside the EU, as well as a mandate for the EC to take important steps on behalf of member states to encourage export of Turkmen gas to Europe. This was a significant diplomatic achievement. Commenting on the role of gas on the future energy balance of the EU, Commissioner Oettinger has emphasized that the desirable growth of gas consumption in the EU is directly linked to supply diversification, particularly via the implementation of the SGC. The SGC would provide confidence to European consumers about gas availability – explained Commissioner Oettinger: *"If the Russians reconcile themselves to the fact that "Southern Corridor" is inevitable and that their former satellites of Turkmenistan and Azerbaijan have the right to make independent decisions, the Europeans will have far* ***more trust in gas as an energy carrier of future."***[13] In the same interviews to the Deutsche Welle he Commissioner has addressed the point of mutual interest in sustaining the growth of gas demand in the EU, indicating that Gazprom will be able to sell more gas in the EU, if supply becomes more diversified: "If Russians are rational, they will not obstruct the "southern corridor" and give the Europeans an opportunity *to diversify sources and routes of gas supply.* ***Because then the Europeans will increasingly bet on natural gas, including gas from Russia.***"

A simple example brought by Commissioner illustrates how confidence in supply could possibly affect the size of the EU's gas market: *"It would be more advantageous for Russians to have a share of 30 per cent in a bigger European gas market of 600 billion cubic meters, than the proportion of 40 percent of a smaller market at 400 billion."* Deutsche Welle has further reported that the Commissioner underscored that the question of how big this market will be in the future is being decided now, for it is now individual EU countries, and the entire EU as a whole, are seriously reconsidering their energy strategies. The Commissioner also

[13] 2011-09-12 Deutsche Welle http://www.dw-world.de/dw/article/0,,15381491,00.html

mentioned that the role of gas as a *'political tool'* is not outside the discussion, suggesting that the EU is determined not to tolerate such a position: *"If Russians will try to prevent the "Southern corridor" technically, via laying the South Stream pipeline, or politically, via putting pressure on Ashgabat and Baku, then personally I will have less trust in long-term gas contracts and less faith in the thesis that gas is not a political tool."*[14]

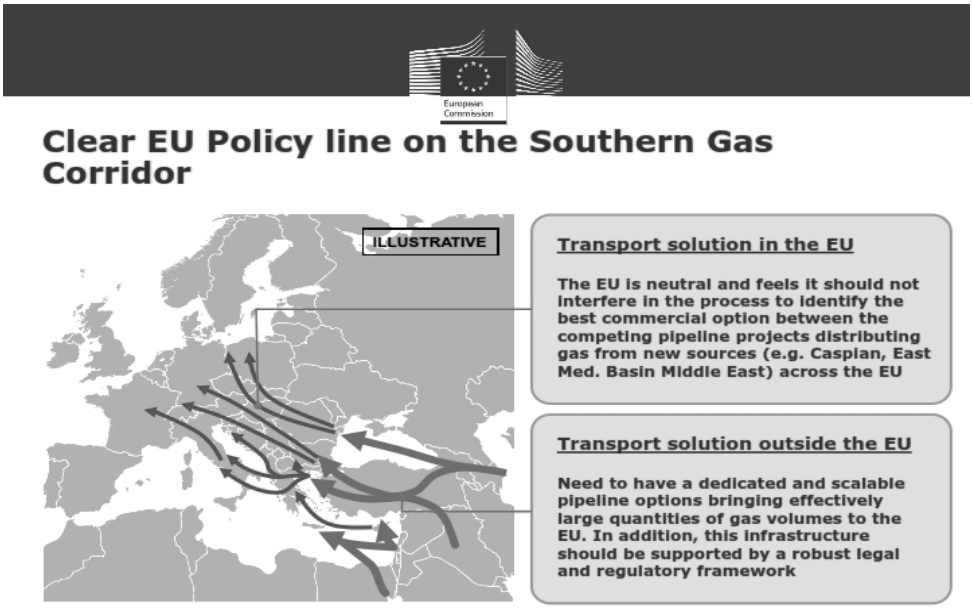

Figure 7. EC adopts different attitude towards the projects to be developed within the EU and outside the EU. Source: EC, September 2012. EC presentation on Southern Gas Corridor for Regional Group for PCIs identification.

DG ENER's efforts in consolidating MS support are backed by President Barroso and European institutions. Commissioner Oettinger was fully supported by Martin Schulz, the newly elected president of the European Parliament, in January 2012 at the discussions held at the European Economic and Social Committee (EESC): *"All those who want to tell us that the solution is at a national level are wrong …Integration on top of what is done at a national level is the only way we will*

[14] ibid.

solve our 21st century problems."[15] At the same forum, Herr Oettinger has called for pooling of national powers to set energy policy in Brussels after 2014*: "Energy does not stop at the borders of the EU,"* but complained that some EU members were not committed to the idea of *"a true single market in energy"* by 2014. The Commissioner referred to these needed changes as *"The energy revolution."*

The EU continues to consider the Southern Corridor plan a 'public good' undertaking. Currently, the process of identifying projects eligible for 'Project of Common Interest' status under the Energy Infrastructure Support Fund proposed in 2011 scheme is ongoing. This scheme will be funded under the "Connect Europe" initiative. Figure 7 demonstrates the different attitude taken for supply projects outside the EU. With the Infrastructure Support Fund scheme, the EU is planning to significantly enhance support for chosen projects via a package that will become available in 2014. As President Barroso has stated, the Southern Corridor 'project' components are among key priorities: *"We have also identified 11 energy corridors that cover all parts of the EU. We are working to finance such projects as the Southern Gas Corridor and the North Sea offshore wind farm to transport electricity to consumers. Other examples include compressors so that gas can flow in both directions when there is an interruption in supply."*[16]

Concerned about high prices EU countries are paying for energy and the related industry loss, Commissioner Oettinger has recently suggested adding a fourth goal to the well-known 20-20-20 targets on energy efficiency, CO2 emissions, and renewables: *"Europe should think about adding a fourth goal to the three 20-20-20 energy-related ones up to the year 2020.*[17] He advocates adding a 20% target on industrialization. According to Oettinger, the share of industry in Europe's GDP has sunk from around 22% in 2000 to 18% in 2010. Bringing back industry would depend on bringing less expensive and reliable gas from the Caspian.

Member States have been traditionally divided in their attitude toward giving up power on energy policy as well as on accessing the risks/reliability of Russian supplies. In the run-up to the February 2011 European Council meeting on energy policy, German Council on Foreign Relations (DGAP) expert Marcel

[15] 2012-02-04 Euractiv=Oettinger calls for 'Europeanisation' of energy powers

[16] Brussels, 19 October 2011. Statement by President Barroso at the press conference on Connecting Europe. http://europa.eu/rapid/press-release_SPEECH-11-688_de.htm?locale=en

[17] http://www.reuters.com/article/2012/07/16/us-europe-oettinger-industry-idUSBRE86F06S20120716

Viëtor said, *"Some are of the opinion that we need to increase the share of natural gas in our energy mixes in order to stop climate change…. But in other EU member states people say because they regard gas deliveries from Russia as less secure that we should not shift our energy mixes to gas."* [18]

A EU single gas market utilizing a SGC has the ability to balance, even increase pipeline supply from Russia. Thus, gas supply security will not prohibit an increase of gas's share in the overall energy mix, even if developments with shale gas will be slow. This will help bring the positions of different MS closer together in relation of the future of gas in the EU.

Conclusions

The current progress with TANAP and on determining how exactly the Shah Deniz II gas will be transported are very important for Caspian supplies entering the EU market. However, Shah Deniz gas is only a small fraction of what the EU needs or what Caspian countries want to supply. The mutually desirable and commercially attractive objective is a gas trade at least ten times more than Shah Deniz II can supply annually. Given current realities, this is also an achievable objective.

The initial Nabucco concept was conceived to utilize the potential of SD2 for triggering TCGP and Turkmen gas. Lack of progress on Nabucco revealed a need for a more comprehensive plan for the Southern Corridor to bring a broader alignment of interests. Additional components introduced within the broader Southern Corridor plan aim to reduce risks and accelerate the synchronized overall developments of upstream and transportation means. Substantial work has been conducted for elaborating the purchase and guarantee instruments via the CDC scheme in order to facilitate arrangements for the purchase of Turkmen gas. Another important direction was the provision of EU financial support for the cross-Black Sea White Stream pipeline project feasibility studies that has resulted in confirmation of commercial comparability of Black Sea and trans-Turkey transportation options. The results of the feasibility studies have created a basis for the development of two independent Geographical Corridors starting from Turkmenistan and delivering gas to the EU: the major

[18] (Deutschlandradio Feb 2, 2011http://www.dradio.de/dlf/sendungen/hintergrundpolitik/1379651/)

route to transport gas via Turkey (Shah Denis II) and a second route across the Black Sea.

The EU considers the Southern Corridor plan a 'public good' undertaking, and is thus planning to significantly increase the financial support of the Southern Gas Corridor projects via the €9 billion Energy Infrastructure support package. The support package will be available for beneficiary projects in 2014 and White Stream has already been included in the list of potential beneficiaries of this financial package.

The construction works on TANAP are expected to begin in 2013. It is important that TANAP is made capable to transport more gas and equipped with a proper legal regime that enables its expansion to serve more volumes of Azeri and Turkmen gas.

The concurrent development of the second, cross-Black Sea route will bring along the reduction of perceived transportation risks, particularly on the Georgia-EU segment of the Southern Corridor so important for both producer and consumer countries. The concurrent (not simultaneous) development of the two parallel projects via independent geographical corridors will be mutually reinforcing and complement each other in creating the best investment environment for further cost-effective but expensive gas developments in Azerbaijan and Turkmenistan, including the Trans-Caspian Gas Pipeline. White Stream will compete only with other possible cross-Black Sea projects such as AGRI-LNG and the proposed CNG to Bulgaria.

It might seem counterintuitive, but benefits from the Southern Corridor's "two entry point" development will also be enormous for Turkey: Not only will the Southern Corridor drive a rapid increase of volumes passing through Turkey from the Caspian, but also provide better possibilities for enhanced supply diversification and wholesale competition. Although the Turkish gas market is growing fast, it's attractiveness, if taken without EU market potential, might not be sufficient to trigger west-bound gas flow from Turkmenistan. Turkey is also vitally interested in helping Caspian states to strengthen their economies and independence, and there is no better way for this than enabling them to establish large-scale strategic trade relations with the EU. This is in line with Turkey's long-term objectives to further ensure the political freedom of Caucasus and Caspian countries and also to benefit from transiting large strategic volumes of Caspian gas. The head of BOTAS, Mr. Fazil Shenel recently stated that gas supply

to EU via Turkey will reach 120bcm/y in 15 to 20 years. Fulfillment of these ambitious goals will require taking into account the sensitivities of relevant parties. In other words, all available instruments to reduce risks and facilitate development in the Caspian will have to be utilized.

TRANSPORTATION OPTIONS FOR AZERBAIJANI GAS THROUGH THE SOUTH CORRIDOR – EXPANSION OF SCP AND TANAP

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Georgia, together with Azerbaijan and Turkey, is an important part of the transit chain for Caspian oil and gas to the west. However, unlike Azerbaijan, who possesses huge oil and gas resources, and Turkey, who is one of the world's largest economies and a physical hub for the Caspian and Middle Eastern oil and gas traveling to the West, Georgia is a small transit country. Georgia's benefits from the transit of oil and gas resources can be counted by the barrels of oil and thousands of cubic meters of gas transported across the system. Therefore, Georgia is interested in loading the existing system to maximum capacity and developing new transportation projects across the South Caucasus Corridor. Thus, Georgia is supposed to provide support to SOCAR's drive for SCP expansion and TANAP.

The much-awaited decision on the development of Shakh Deniz phase 2 is being stalled after several months of difficult negotiations among various stakeholders.

The interested parties, internal members of the consortium and external EU market players, are finding it extremely difficult to agree on the redistribution of capacities and access to the transportation network. Currently there are two projects which have gained preliminary approval from the SD consortium: TANAP driven by SOCAR's (80% of stake), TPAO (15%), and Botash (5%), and Nabucco West supported by the SD consortium on a consensus basis. Both of these projects are at the advanced stage of consortia formation and may be established by the end of the year. However, the BP and Statoil supported -Trans Adriatic Pipeline has not been completely abandoned.

The arduous negotiations and final rejection of the original Nabucco project, which was conceived of by transportation companies (with small exceptions), demonstrate that midstream projects can hardly materialize without strong support from the owners of the resources. Indeed, Nabucco enjoyed strong support from the European Commission, from market players such as transportation companies in the eastern EU countries and from the transit countries (HGA was signed with Turkey in 2011), however it was finally abandoned because it failed to attract the interest of gas producers in Azerbaijan. Neither SOCAR nor other SD members ever joined the proposal.

It can thus be concluded that midstream projects can only be implemented if they reflect the interest of producers and resource owners in Azerbaijan. TANAP has a real opportunity to be implemented because it is driven by the largest gas resource owner and producer, the Azerbaijani State Oil Company (SOCAR), which holds an 80% stake in the consortium. However, SOCAR is not the only producer of gas in Azerbaijan. Other members of SD consortium and potential producers of offshore fields such as Absheron and Nakhichevan also require access to the export network. Aware of the need to access the export network among other actual and potential producers of natural gas in Azerbaijan, SOCAR invited other members of SD consortium to join TANAP. Negotiations have been held with BP, Statoil and Total.

Two Versions of TANAP (Trans Anatolian Pipeline) were initiated by President Aliev and Prime Minister Erdogan in Ankara in October 2011. Shortly after, SOCAR and TPAO/Botash agreed to divide the shares (80% & 20% accordingly) and other members of the SD consortium were invited to join. The TANAP pipeline is planned to begin at the Georgian-Turkish border and terminate at Turkish/Bulgaria border where it may be linked up to Nabucco West and/or TAP. There are two options for TANAP. The first one sees a 42 inch, 20bcm capacity pipeline designed to transport SD 2 gas and would be supported by BP and Statoil. The second option envisions a 56 inch pipe, scalable to 60 bcm capacity and designed to ship gas from Shafag/Asiman, Absheron, Babek/Umid, other fields, and possibly Turkmen gas as well. The later version of the pipeline is supported by SOCAR. Both versions of the project plan to construct a pipeline across Azerbaijan parallel to the South Caucasus Gas Pipeline as well as two compressor stations in Georgia. This additional infrastructure is necessary in order to accommodate the additional volume of gas from SD phase 2 and the other fields mentioned above.

Interests of SOCAR and other SD producers: Gas producers in Azerbaijan have emphasized on several occasions that they are interested in having their own transportation capacities within pipelines and gaining market access along the route in the EU. SOCAR has managed to reach agreements on access to wholesale market and distribution in Georgia and Turkey and would like to enter the market within the EU as well. Other gas producers in Azerbaijan like BP, Statoil, and Total lack such agreements, but would like to hold transportation network capacities and also have access to the growing market in the South Eastern EU. Producers justify their desire to hold transportation capacities and market share through the need to optimize their transportation costs, to forecast medium and long term market demand, and, most importantly, to retain the value chain along the route.

All producers in Azerbaijan would like to hold capacities in the transportation network and market shares equal to their shares in the upstream projects. SOCAR, as the owner of largest gas reserves and production through PSAs, holds only 10% of capacity in SCP but 80% in TANAP. Thus, it can be assumed that SOCAR would be willing to increase its stake in SCP, retain at least 40% of its TANAP stake, and remain the operator of the pipeline. SOCAR may be willing to take a stake in Nabuco West or/and TAP as well. BP and Statoil, which possess the largest shares, the upstream SD, and deep ASG and SCP, would probably like to negotiate into TANAP capacities corresponding to their shares in upstream and SCP. The same can be said about Total and GDF, which each hold 40% in the Absheron gas field.

Nabucco West which is a downsized version of the original Nabucco will also have to take the interests of producers into account. The SD 2 consortium will select the project which will provide for direct access to the growing South-East Europe market.

If these assumptions are correct, all pipeline projects, including TANAP, Nabucco West and/or TAP, and even SCP, are subject to reshuffling in order to harmonize the interests of all actual and potential producers in Azerbaijan. The question is do these projects comply with the interests of consumers in the EU and the governing body's energy policy directives?

The market: Producers of SD2 and other fields in Azerbaijan are targeting the growing gas market in the South Eastern EU. In addition, the closure of six nuclear power stations in Germany means that an increase in the demand for gas is also expected in Germany. There is no final decision yet in France whether to

phase out outdated nuclear power stations or to extend their lifetime to 60 years. This decision will impact the rate demand will grow in France as well. The TANAP-42 inch, 20bcm per annum capacity and downscaled Nabucco West target the growing markets in South East Europe. However, neither of these projects takes into account the interests of Germany and France, the first and second economies of the EU and continental Europe.

The EU Commission, which reflects the interests of the EU as a whole rather than individual producers, support the idea of building an extra large Nabucco to link up with TransCaspian gas pipelines connecting Azerbaijani and Turkmen offshore gas fields to Europe. Up to present no significant progress has been observed in this regard.

Of the current TANAP, Nabucco West or/and TAP projects being promoted by SOCAR, the 56 inch, scalable to 60bcm capacity pipeline better complies with long term expectations of increasing demand in both the mature western European markets as well as in Southeastern Europe. SOCAR's version of expended SCP, TANAP, Nabucco West or/and TAP capacities would potentially be able to accommodate additional volumes of Turkmen gas in case the Trans Caspian Gas Pipeline were built. Thus it better conforms with the Extra Large Nabucco-based vision of the EU commission rather than the smaller option favored by other members of SD consortium.

Negotiations on determining the consortia and allocating capacities have been underway. As previous experience with the original Nabucco demonstrates, midstream projects need to reflect interests not only of the market and consumers but also of major resource owners and producers in Azerbaijan in order to materailize. It is now up to SOCAR, as the driving force of these negotiations, to bring them to an end.

Competitive projects- upstream: Recent discoveries in the Black Sea, South East Mediterranean (offshore Cyprus), and Israel, as well as in northern Iraq, provide an important alternative to Caspian gas for the EU. Several hundreds of million dollars have been invested in upstream gas production in Iraqi Kurdistan. In two or three years time about 10-15 bcm of gas per annum will be available to be transported to Turkey for domestic consumption as well as to the EU market. Another option for the EU is LNG from Cyprus and Israel.

The parties involved in negotiations on SCP expansion, TANAP, Nabucco West/TAP must keep these outside energy sources into account.

The Role of Turkey: Turkey together with Azerbaijan, is the leading force for the implementation of TANAP. Turkey is viewed as both a market and a transportation route for gas produced in Northern Iraq-Kurdistan to the EU. In addition, Turkey receives gas from Russia through Blue Stream and from Iran through Iran/Turkey pipeline. This provides Turkey with exceptionally strong position in negotiations for transit and access to gas market in the EU for its companies TPAO/Botash.

Competitive projects-midstream-South Stream: Gasprom has already signed agreements with South-East EU countries on the building of South Stream; the final decision on investment is expected by the end of the year. South Stream project is in direct competition with the Southern Gas corridor in terms of resources (Turkmen gas) and market (southeastern Europe). Any delay in negotiations and agreements on TANAP, Nabucco West/TAP or Trans Caspian increases the chances of South Stream to go forward.

SOUTHERN ENERGY CORRIDOR AND PROSPECTS OF EU GAS MARKET DEVELOPMENT

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The collapse of the Soviet Union and the emergence of the new independent states of Central Asia and the Caucasus have caused significant changes in the global energy market. The breakup of the Soviet Union gave rise to several independent energy-exporting countries and introduced new routes of transporting oil and gas to the world markets. In all, the picture has become much more complex compared to the days of the Soviet Union, bringing both opportunities and challenges.

One of the particular problems was the reliability of old energy transit routes in Eastern Europe. The main means of solving this problem was the construction of pipelines bypassing the problematic states of the Baltic and Black Sea regions, as well as the establishment of Europe's energy supplies from the Caspian region (which accounts for a tenth of the world's oil and gas resources) through the South Caucasus and Turkey.

Through two decades of post-Soviet development South Caucasus energy transit has shown potential to become an important part of the world energy market and provide for energy security for the European Union. Countries like the U.S, European Union states, energy exporters (Azerbaijan and Central Asia) and transit countries (Georgia, Turkey) have shown interest in building oil and gas delivery through the South Caucasus region. However, up to now, South Caucasus transit is engaged in only a modest volume of oil and gas delivery.

Russian political and business circles have always been worried about the concept of the Southern Energy Corridor, which provides for the construction of new pipelines across the South Caucasus, which bypass Russia on their way to Europe. Russia is currently both the largest energy supplier and transit country

for EU energy, and the Southern Energy Corridor may challenge Russia's energy partnership with the EU and even weaken the political and economic position of Russia.

There are concerns in Russia that large-scale supplies from Central Asia may lead to a decrease in European demand for Russian energy and even lower prices for oil and gas in Russia's most important market. These fears have a special weight due to the Russian economy's continued high dependence on the so-called "oil needle".

Russia owns among the largest oil and gas reserves in the world, accounting for over 34% of natural gas and about 13% of the worlds proven oil reserves. Despite the constantly declared intentions of Russian officials to ensure the balanced development of the main sectors of economy, the situation is not actually changing. In 2011, revenues from the oil and gas sector once again formed about 50% of total budget revenue. This puts the Russian Federation into a hostage situation in the global energy market, which is fraught with many threats.

As discussed during the "Modern technologies of hydrocarbons extraction from subsurface: problems and solutions" round table, held by the Energy Committee of the State Duma of RF in the spring of 2012, the problems of gas industry development in Russia are, first of all, due to a significant depletion of base fields. Any oil and gas field experiences periods of production growth, stabilization, and then decrease due to a reduction of hydrocarbon reserves and the fall of reservoir pressure. The fields of Western Siberia, Cenomanian gas deposits of Medvejiy, Vyngapurovskoye, Urengoy, Yamburg, Yamsoveyskoye, and Komsomolskoe are all at the point of falling production.

During the meeting on promoting continental shelf development, held on April 12, 2012, Russian Prime Minister Vladimir Putin drew attention to the offshore oil fields, especially in the Arctic, as a strategic reserve for the twenty-first century. Resources of oil, gas and gas condensate fields located on the continental shelf contain the equivalent of more than 700 billion barrels of oil, or nearly a quarter of the world's estimated hydrocarbon resources. The development of these fields will require innovative technological approaches and significant investments, as well as long term exploration and development.[1] This increases the degree of Russia's interest in energy cooperation with the EU.

[1] "Modern technologies of hydrocarbons extraction from subsurface: problems and solutions" Moscow, State Duma of Russian Federation, Energy Committee, June 9th, 2012.

The U.S. and EU, who each aim to ensure the energy security of Europe through new energy sources and a maximum diversification of supply, provided political and financial support for the "Baku-Tbilisi-Ceyhan" and "Baku-Tbilisi-Erzurum" pipelines. Meanwhile, a political and military partnership with Azerbaijan has been actively developed, and within the framework of NATO partnership Azerbaijan has received substantial assistance in terms of military and naval construction. Azerbaijani officials appreciate the level of this interaction and have repeatedly stated that cooperation between Azerbaijan and NATO is strategic.

The broad discussion of plans to turn Azerbaijan into a transit country for Central Asian energy exports to the world market has caused some concerns in Moscow, which seeks to preserve its political and economic positions in the Caspian region. Until now, Russia's leadership has successfully neutralized this threat by developing energy cooperation with Central Asian countries (providing transit to foreign markets through existing pipelines, through purchases of oil and gas, and etc.). In 2009, Russia, who has no shortage of its own gas, began to buy gas from Azerbaijan. However, Turkey remains the main importer of Azerbaijani gas.

The growth of Azerbaijan and Turkey's energy partnership following the collapse of the Soviet Union has been very difficult and for many years constituted a barrier to the development of energy transit through the South Caucasus. Despite participation in mutual energy projects, the disputes between these two countries over the price issue of Azerbaijani gas for Turkey and its transit to Europe through Turkish territory were sometimes quite acute.

Under the terms of the 2001 contract, the price of Azerbaijani gas was set at $120 per one thousand cubic meters. However, the contract stipulated that the annual rates may be revised by mutual agreement.

The first deliveries of the "Baku-Tbilisi-Erzurum" gas pipeline began in late 2006. In April 2008, Azerbaijan declared its intention to increase the price, as it was nearly three times lower than in Europe. However, the Turkish state company Botas opposed such an increase, despite buying fuel from Russian "Gazprom" at markedly higher prices at the same time.

The tariff disputes on pumping Azeri gas through Turkey were also quite acute. The Turkish side has proposed to set the tariff for the transit of Azerbaijani gas to Europe at 70% of the "generally accepted international norms." Ankara was clearly trying to link the issue of pumping gas to Europe with maintaining preferential prices for Azerbaijani gas to Turkey. According to the Azerbaijani

side, tariffs for pumping gas proposed by Turkey were completely unacceptable, as they were 70% higher than rates in the region.

Contradictions between Turkey and Azerbaijan in the energy sector deteriorated further following the signing of the Zurich protocol on establishing diplomatic relations between Turkey and Armenia. This has led to an unprecedented cooling of bilateral relations. In October 2009, President Ilham Aliyev said that Azerbaijan would consider alternatives of gas export, as the results of Turkish-Azerbaijani talks on gas transit were not satisfactory. Moreover, he accused Turkey of hindering the achievement of agreements by offering unacceptably low prices for Azerbaijani gas and said that until recently, Azerbaijan sold natural gas to Turkey at prices 30% cheaper than world market rates.

The contradictions in relations between Turkey and Azerbaijan, and uncertain prospects for the export of Azerbaijani gas to Europe, forced Baku to seek alternative markets. On October 14, 2009, Gazprom and the State Oil Company of Azerbaijan Republic (SOCAR) signed a contract for the export of 500 million cubic meters of Azerbaijani gas to Russia at a price which Azerbaijani authorities described as "beneficial to both sides".

Volumes of Azerbaijani gas supplies to Russia steadily increased and according to contracts signed in 2011, "Gazprom" was to receive two billion cubic meters of gas in 2011 and even more in 2012. An additional agreement on increasing the volume of Azerbaijani gas sales to Russia up to three billion cubic meters per year, was signed in Sochi, on January 24, 2012.

Along with the expansion in the supply of Azerbaijani gas to Russia, SOCAR announced the possibility of constructing liquefaction enterprises in Georgia, with further transportation by gas carriers across the Black Sea to Romania and Bulgaria.

Iran can become another potentially important consumer of Azerbaijani gas. After the collapse of the USSR, Azerbaijan and Iran have agreed to supply gas on the basis of reciprocity. Azerbaijani gas is delivered to Iranian border provinces. Iran, on the other hand, supplies the same amount of gas to the autonomous territory of Nakhichevan, which is geographically isolated from the rest of the Azerbaijan. According to reports, daily gas exchange is up to 1.5 million cubic meters. In January 2010, SOCAR and the National Gas Company of Iran signed an agreement on gas supplies to Iran (initially 1.2 million cubic meters a day). The Iranian side also expressed its willingness to buy Azerbaijani gas in the future.

The development of energy cooperation between Azerbaijan and its neighbors Iran and Russia is aided by the remianing Soviet-era gas pipelines linking these countries. Azerbaijan and Iran are linked via the Gazi-Magomed-Astara-Bind–Biand pipeline, the capacity of which is 10 billion cubic meters a year. However, the tense situation around Iran lately, has become an obstacle to further development of the Azerbaijani-Iranian energy cooperation. Despite this, the diversification of gas supplies carried out in a very short period of time by Azerbaijan strengthened Baku's position in negotiations both with transit countries and with potential recipients of Azerbaijani energy.

It is not a coincidence that after signing the gas contract with Russia, President Ilham Aliyev said that Azerbaijan is not happy with the gas prices and tariffs for the transit proposed by Turkey and directly accused Ankara of preventing the export of Azerbaijani fuel to Europe.

It is clear that if Turkey continues to delay its decision on making gas prices and transit fees acceptable for Azerbaijan, the extent of energy cooperation between the two countries will be minimized. In this case, all of the Southern energy corridor projects would be completely buried. However, it would not be so desirable for Baku, as it would deprive the country of a valuable customer, "European perspective", and would make it more dependent on Iran or Russia. A conflict with Azerbaijan also contradicted the interests of Turkey and now both countries have at last managed to overcome their obstacles and begin to implement new projects in the energy field.

An important motive for enhancing the Azerbaijani-Turkish cooperation in the energy sector is the prospect of the Nabucco pipeline. Nabucco has been the main project of the Southern energy corridor, but has become more uncertain in the current economic crisis. Implementation of this ambitious project would provide for the transportation of Caspian energy resources to the world markets and turn both Central Asia and the South Caucasus into important parts of the EU's energy security.

The Nabucco consortium was created in 2002 with the purpose of developing a pipeline project that would stretch 3,300 km to connect the end of the Baku-Tbilisi-Erzurum pipeline in Eastern Turkey with a gas distribution terminal in Austria. The capacity of the Nabucco was planned for an estimated 26-32 bcm of gas a year that would be drawn mainly from the Azerbaijani Shah Deniz field and Turkmen gas fields.

The starting date for the realization of Nabucco has been postponed many times. In 2011, the European Commission once again announced its intention to implement this project. In the EU policy document "EU Energy Policy: interacting with partners beyond our borders," a Trans-Caspian pipeline, which is considered part of the Nabucco project, was listed among the major projects necessary to ensure the energy security of the EU. The paper noted that the agreement between the EU, Azerbaijan, and Turkmenistan regarding the Trans-Caspian pipeline will provide the basis of building the infrastructure that will ensure delivery of Turkmen gas to Europe via the Caspian Sea.

According to preliminary calculations made by European experts, gas supplies via a Trans-Caspian pipeline could begin in the year 2017. The EU stated that the construction of Trans-Caspian pipeline only required support from Baku and Ashgabat while the position of the other Caspian states such as Russia and Iran, who opposed the project, could be ignored. The EU also did not regard the unresolved legal status of the Caspian Sea basin as an obstacle for the implementation of a Trans-Caspian pipeline.

Over time, the initial enthusiasm for the Nabucco project has given way to skepticism caused by the uncertainty with its funding sources, complexity of providing large-scale deliveries of Turkmen gas across the Caspian Sea in the face of negative attitudes of Russia and Iran, and the ever-growing volumes of Turkmen gas being pumped to China. Another negative factor for Nabucco was the economic crisis in the EU, which raised fears about the possible reduction in energy demand as the European economy continued to experience difficulties.

Many experts have come to the conclusion that the current economic crisis in Europe completely buried the Nabucco project. Even if such estimates are too pessimistic and premature, in the current circumstances, it is logical that Azerbaijan and Turkey have preferred not to wait for the implementation of the ambitious Nabucco, and rather carry out their own smaller but more feasible projects.

In December 2011, Azerbaijan and Turkey signed a memorandum of mutual understanding on establishing a consortium that would build a pipeline to deliver gas from the Azerbaijani "Shah Deniz" field to Europe through Turkey. Six months later, on June 26, 2012, Azerbaijan and Turkey signed an intergovernmental agreement on realization of Trans-Anatolian project pipeline (TANAP).

The length of the Trans-Anatolian gas pipeline from east part of Turkey to its western part will be about two thousand kilometers. The future plan is for TANAP to be attached to pipelines leading to central Europe and Italy. The initial capacity of the new pipeline is planned for 16 bcm per year with a prospect of its expansion to 25 bcm. In this case, about 6 billion cubic meters will be delivered to Turkey, and the rest will be supplied to the European market. Construction on the pipeline is planned to begin in 2017 and according to preliminary calculations, the cost of the pipeline could range from 7 to more than 10 billion Euros.

The prospects of the TANAP project is much more optimistic than Nabucco for several reasons. First, the project was supported from the beginning at the state level by the initiators of the project, Azerbaijan and Turkey, who together, have the opportunity to finance its implementation. In addition, the project has support from the largest European companies and it is clear that the project is not in danger of being buried due to lack of funds, or under the weight of endless debates by too many participants and interested parties.

However, a potential threat to TANAP is the economic and political crisis in Europe, which could lead to a sharp drop in the demand for gas. According to Russian expert Boris Kagarlitski, "progressing financial crisis in the EU will end the era of expensive gas pipelines in this part of the world for a long period of time." Such arguments are valid, but it must be taken into account that the economic crisis in Europe is complicated by expensive alternative energy projects, which leads to a reduction in its share of the energy market and increases interest in oil and gas. In case of Europe moving out of the crisis, its needs for all types of energy will increase, resulting in higher energy consumption and even greater demand for the TANAP project.

There are a few factors in favor of the TANAP project. Amongst them are new challenges to Europe’s nuclear industry o following the Fukushima plant disaster and progressive instability in North Africa and the Middle East which is reducing the number of reliable energy suppliers to Europe. Finally, the EU’s desire to reduce its energy dependence on Russia also favors the TANAP project.

Can TANAP lead to negative consequences for Russia in European markets? Russia currently supplies 25 percent of Europe’s oil demand and 42 percent of Europe's gas. The supply of oil and gas to the European market is vital for Russia because Europe continues to be its most reliable and capacious market.

Russia's active promotion of energy to Asian markets does not mean that it intends to step down as the main supplier of energy resources to Europe. On the contrary, the Russian government puts great importance on promoting new energy projects in Europe. First of all, it has plans for the development of "North" and "South" flows to solve the problem of transit countries and provide Russian gas directly to European consumers.

According to forecasts, annual gas consumption in the EU can reach 610-640 bcm by year 2015, almost half of which will be provided by imports from Russia. It is obvious that in such a capacious market TANAP's maximum volume flow of gas to Europe (19 bcm) is not a serious threat to Russian suppliers. Moreover, the project (as opposed to Nabucco) does not affect Caspian Sea status issues that are "sensitive" for Russia and other neighboring countries. Therefore, the project does not cause any objections from the Russian authorities.

Although there are not as many problems in TANAP compared to Nabucco, this does not mean that Russia will not try to protect its interest in the European energy market and will not be persistent in promoting its own new energy projects. The same factors that contribute to implementation of the Azerbaijani-Turkish project TANAP are in favor of the Russian Baltic and Black Sea projects. This suggests that the new Russian pipelines and TANAP will be not competitors but will logically complement each other in the European energy market.

CHAPTER 4

TANAP and Trans-Caspian pipeline prospects

KAPAZ OR SARDAR?
ENERGY DILEMMAS IN AZERBAIJANI – TURKMEN RELATIONS

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The Caspian region is home to a number of ongoing geopolitical processes, processes which undoubtedly hold many surprises for the future. Tense Azerbaijani-Turkmen relations constitute just one of the region's geo-political clots. These two Turkic states have coinciding geopolitical interests which prevent the solution of general security and political problems in the Caspian region. Despite certain cultural and historical similarities, there are significant differences between Azerbaijan and Turkmenistan which may seem surprising at first glance.

Similarities in Azerbaijani-Turkmen Nation-state Affairs

Azerbaijan and Turkmenistan both became independent in 1991 with the difficult issue of never having completed their respective nation-building processes. Both Turkic states faced the problem of having to solve identity issues initiated first under Tsarist Russian rule and subsequently continued under the Soviet regime.

In order to decide its direction, newly-independent Azerbaijan should have solved the question of national identity and formulated a proper concept about its national history. Azerbaijanis and Turkmen both held various conceptions of national identity which lingered on from the Soviet period. In 1936, following Josef Stalin's order modeled on the pan-Iranian concept, the Turkic nation residing in current-day Azerbaijan was dubbed as the "Azerbaijani nation" and the name of its language (the Turkic language) was changed in order to sever the nation's ethnic roots and isolate it from the Turkic world. The Turks had to refer to themselves as "Azerbaijanis" and call their language "Azerbaijani language", or simply "Azerbaijani". The word "Turk" was even banned, and there was also

a concerted effort to deprive the Turks of their past. This was achieved by mixing them with "local" ethnic groups and creating a new map which traced the nation's ancestors to Midiya rather than to ancient and medieval Turkic lands.[1] In other words, newly-named "Azerbaijanis" had to search for their past in the geographically-limited history of Azerbaijan rather than in wider Turkic history.

Thus, a new ethnic concept – "Azerbaijani" – was created. According to this concept, an ethnic-social unit dubbed the "nation of Atropaten" comprising Iranian tribes existed in the fourth century BC (in the South), while an ethnic-social unit referred to as the "Albanian nation" comprising Caucasian ethnicities existed from the third to sixth centuries (in the North). The Oguz (Saljuks), who populated the area from the sixth century onward along with other Turkic tribes, changed the language (of the presumably local tribes). This "complete Turkization" continued until the fourteenth and fifteenth centuries.[1] This nonsensical concept is simply a form of the pan-Iranian approach and still exists in the official history of Northern Azerbaijan.[2]

National intellectuals had limited choices when the Soviets had complete control over understandings of history and Turkism. Under these conditions, national historians and linguists fought to identify the ethnicity of the various tribes mentioned in different sources. This fight was even more acute in the 1980s. Dozens of monographs and articles were published claiming that, before Christ, tribes such as the Shumers, Kimmers, Lullubis, Kutis, Massagets, Skifs, Bunturks, Bulgars, Kangars, Barsils, Huns, Sabirs, and Khazars existed and lived for centuries in the modern geographical territory of Azerbaijan. The past 20-30 years have been a significant period in ethnic studies relating to the Azerbaijani Turks. It must be noted that, though such research has positive aspects, it is necessary to avoid excessively primordial approaches. It is still impossible to talk about the resolution of this emerging scientific and political problem.

During the national-democratic movement at the end of *Perestroika,* especially under the presidency of Abulfaz Elchibey (1992-93), nation-building efforts were promoted. However, with the seizure of power by local ex-Soviet bureaucrats, local issues and the personality cult have become the main factors of social-ideological life.

In Turkmenistan, the Soviet regime did not create the problem of ethnonyms, yet a number of concepts were formulated in order to impede nation-building process. During the Soviet period, Turkmenistan achieved a certain level in national consolidation. For example, the Turkmen language was standardized

and modern Turkmen literature was created. As well, the Soviet period saw the creation of a universal educational system, the promotion of national culture, and the emergence of academic structures. In comparison to other countries in the region, Turkmenistan is one of the most ethnically homogeneous countries. Under the leadership of President Saparmurad Niyazov (1991-2006), nationalism became state ideology in post-Soviet Turkmenistan. The *Ruhname*, which was published on behalf of President Niyazov, became a standard textbook in the country's educational system. The book traced the historical roots of the Turkmen to Oguz Khan, an Oguz tribal unit and Turkmen ethnonym. Surprisingly, Turkmen identity was separated from wider Turkic identity and assigned extraordinary individual characteristics. Another interesting aspect of Turkmen identity is apparent in the following comment: "Even though Turkmen are going in the opposite direction of other national groups, Turkmen ethnonyms are against to each other." [1]

Niyazov's "complete nationalism" was of an undemocratic nature from the very beginning, and it became part of Niyazov's personality cult as time passed. European writer Germana Janzi expressed an interesting opinion on this point: "The complexity of Turkmen national identity has become one of the important factors in Niyazov's strong centralized state affairs. The title of *Turkmanbashi* (the leader of Turkmens) given to him in 1993 can be seen as a step to strengthen Turkmen unity."[2] The writer's claim about the "complexity of Turkmen national identity" and Niyazov's personality cult can hardly be seen as an element of "Turkmen national unity". Rather than "complexity", it would be more appropriate to talk about Niyazov's strategy as an incomplete nation-building effort. Niyazov was able to build a personal dictatorship in spite of this incomplete effort. Niyazov's predecessor, President Gurbanguly Berdymukhamedov, was aware of such excessiveness and put an end to the Turkmenbahi personality cult. However, it should be added that the development of democracy in Turkmenistan is not mutually exclusive with a limited amount of nation-building.

[1] Michael Denison, İmkansızı Yerine Getirme Sanatı: Siyasal Simgecilik ve Sovyet-Sonrası Türkmenistanda Ulusal Kimlik ile Kolektif Bellek Yaratılışı, Gönül Pultar (derleyen), *Ağır Gökyüzünde Kanat Çırpmak. Sovyet-Sonrası Türk Cumhuriyetlerinde kültürel Kimlik Arayışı ve Müzakiresi*, İstanbul: Tetragon, 2012, s. 248.

[2] Germana Canzi, Turkmenistan's Caspian Resources and its International Political Economy, in Shirin Akiner (ed.), *The Caspian. Politics, Energy and Security*, London and New York: RoutledgeCurzon, 2004, p. 183.

Geo-political Differences

Despite being neighbour states on opposite shores of the Caspian Sea, Azerbaijan and Turkmenistan consider themselves to be located in separate regions and thus carry different geographical identities. Azerbaijan views itself as a Caucasian state while Turkmenistan considers itself as a Central Asian country. Geo-strategically, Azerbaijan leans towards Europe and NATO. Turkmenistan, on the other hand, announced its neutrality during the first years of independence and is a member state of the Non-Aligned Movement, thus refusing to join any bloc. Nevertheless, Turkmenistan joined NATO's Partnership for Peace program.

Geo-politically, the situation is quite different. Although Azerbaijan is a member of the CIS, it actively expresses a desire for Euro-Atlantic integration and is attempting to leave Russia's influence. Azerbaijan's relations also remain tense with Iran as a result of the oppressed territory of South Azerbaijan, which is located in Iran and is several times larger than the territory of the Republic of Azerbaijan. A sizeable Turkmen minority also resides in the Turkmen desert of northeastern Iran. As far as is apparent, the existence of an oppressed Turkmen minority in Iran has not seriously influenced Iranian–Turkmen relations. Ashgabat pursues a soft policy towards the two regional giants, Russia and Iran, and one of the reasons for Turkmenistan's refusal to engage in pan-Turkic integration stems from a desire not to alienate these states.

Caspian Issues and Tensions

From the beginning of independence, both Azerbaijan and Turkmenistan desired a bright future, expecting that oil and gas exploration would transform them into post-Soviet "Kuwaits". Azerbaijan – with a population of 9 million – and Turkmenistan – with a population of 5 million – have significant oil and gas reserves, particularly Turkmenistan, whose estimated natural gas reserves (26 trillion m^3) rank as the third or fifth largest in the world.

Today, Azerbaijan oil production achieved 45 million tons (22nd in the world) and Turkmenistan reached 10 million (41st in the world). Natural gas production in Azerbaijan measures at 18 billion cubic meters (bcm) while Turkmenistan's is approximately 70 bcm. Azerbaijan's annual profit from hydrocarbon reserves is about 20 billion US dollars, and Turkmenistan's profit, which is undisclosed owing to its status as a "state secret", is also quite high. Azerbaijan has attracted tens of billions of US dollars (20 billion dollars for the second phase of Shah

Deniz alone) and new technology from the Western countries in order to implement these projects. Even though Azerbaijan and Turkmenistan have no access to oceans, the issue of exporting crude oil and natural gas has already been settled. Several oil and gas pipelines connecting Azerbaijan to foreign markets – Baku-Novorossiysk, Baku-Supsa, Baku-Tbilisi-Ceyhan and Baku-Tbilisi-Erzurum – are already functional. Turkmenistan has also managed to wean itself off of Soviet-era (now Russian) oil and gas pipelines, as gas pipelines stretching from Turkmenistan towards Iran and China became functional in 2009. In addition to attracting Western capital and technologies and constructing export pipelines, both countries must deal with the issue of Caspian delimitation. This obligation applies to both countries, though the strongest contradiction between the countries is the nature of this issue.

Without going into the details of ongoing discussions over the Caspian's legal status, it is worth noting that Azerbaijan has always proposed the surface and bottom line medium division of the Caspian Sea since independence. So far Russia, Kazakhstan, and Azerbaijan have signed protocols on the bottom line medium division of the Caspian Sea. Iran used to support the condominium principle in the use of the Caspian's resources, though recently Tehran has been suggesting equal division of the Caspian seabed (20 per cent) in accordance with the national sectors.

Turkmenistan has the most ambiguous position of the five Caspian littoral states. In the early 1990s, Ashgabat supported the proposal for joint use of Caspian resources and the establishment of an organization of Caspian coastal states proposed by Russia and Iran. The two Caspian giants (Russia and Iran) insisted on the principle of condominium in an effort to impede the arrival of Western capital and technology, as well as to project political influence into the Caspian. The 1993 law stated that a 20-mile stretch of coastal waters fell under Turkmenistan's jurisdiction. However, following the agreement between Russia, Kazakhstan, and Azerbaijan on the medium line seabed division of the Caspian, Ashgabat made several changes to its position on the Caspian's legal status. President Niyazov proposed a ban on unilateral activity by coastal states until an agreement on delimitation was reached. [3] Following Niyazov's official visit to Washington in April 1998, the United States' support for the Caspian's national

[3] *Nezavisimaya qazeta,* 4 September 1997.

sector division presented additional pressure, and in the following negotiations Ashgabat supported the idea of national sector division so much touted by Iran.[4]

Turkmenistan's ambiguous position on the Caspian's legal status represents an attempt not to offend "big brothers" Russia and Iran, while simultaneously continuing the dispute with Azerbaijan over the Sardar (or Kapaz, in Azerbaijani) field. The July 1997 agreement between the State Oil Company of Azerbaijan Republic and two Russian oil companies on the exploitation of the Sardar/Kapaz oil field (50 million ton reserve) raised tension between the two countries. Ashgabat claimed the field was in Turkmenistan's national sector and opposed the agreement, with Moscow subsequently liquidating the agreement.

The Sardar/Kapaz issue exacerbated relations between Azerbaijan and Turkmenistan as time passed. In 2001 Turkmenistan closed its embassy in Baku due to "temporary financial difficulties", and though Azerbaijan set up an embassy in Ashgabat at the end of 2002, Turkmenistan's embassy in Baku remained closed until 2008. Both states obtained military boats from the United States and Ukraine to defend their respective territorial waters. According to media reports, Turkmenistan maintains the second strongest navy among the Caspian's five coastal states behind Iran.[5] Ashgabat appealed to the United Nations International Court of Justice over the Sardar/Kapaz issue, though Baku stated the court's ruling would be inconsequential as Azerbaijan does not recognize its jurisdiction.

As is clear from these events, Azerbaijan recognized the field as disputed and ceased operations there. Unlike in the Gunashli (known by the Turkmen as Omar) and Chiraq (known as Osman) fields, Baku proposed joint use of Sardar/Kapaz. Throughout the following years, the Caspian's legal status – and in particular ownership of the Sardar/Kapaz field – remained a topic of discussion during summits attended by Caspian state heads as well as in various working groups of deputy ministers.

The Trans-Caspian Gas Pipeline is another point of contention between Azerbaijan and Turkmenistan. In November 2008, the heads of three fraternal states – President Gurbanguly Berdymukhamedov of Turkmenistan, Abdulla

[4] Additional information can be found from: Vladimir Mesamed, Turkmenistan: Oil, Gas, and Caspian Politics, Michael Croissant and Bulent Aras (ed.), *Oil and Geopolitics in the Caspian Sea Region,* Westport, Connecticut, London: Praeger, 1999, pp. 213-219, also p.34; Germana Canzi, Turkmenistan's Caspian Resources and its International Political Economy, pp. 191-192.

[5] http://russian.eurasianet.org/node/59447

Gul of Turkey, and Ilham Aliyev of Azerbaijan – met to discuss the EU-supported Nabucco project along with other issues and announced a "common position in the policy of taking energy resources to the world markets through diverse routes". Nabucco was to take Central Asian and Azerbaijani natural gas to Europe via Turkey. However, many questions arose after the Turkmenbashi summit. Azerbaijan's position changed as exploitation of the rich Shah-Deniz gas field began and new political events delayed the realization of the pipeline project.

In short, many more agreements will be needed in order to realize this project. However, two countries could benefit significantly from the Trans-Caspian Gas Pipeline: Azerbaijan and Turkmenistan. The realization of this project could become a starting point for the normalization of relations between the two countries. In turn, this could serve as a good foundation for the resolution of the other problems (e.g., Sardar/Kapaz dispute, Caspian legal status).

Conclusion

Ethnic ties are not the only factor that connects Azerbaijan and Turkmenistan, as there are many coinciding aspects in the countries' geo-political and geo-economic interests. New leaders with more pragmatic approaches have the responsibility of lifting the tensions between the two countries that were started under Heydar Aliyev and Turkmanbashi (Saparmurad Niyazov). Finding common language in the Trans-Caspian pipeline project would give impetus to the resolution of other problems in the Caspian region, in particular the legal status of the Caspian. Turkmenistan's national interests coincide with those of Azerbaijan and Kazakhstan rather than the "big neighbours" Russia and Iran. Turkey should also play a mediating role between Azerbaijan and Turkmenistan.

There is another factor that links these two independent, neighbouring, fraternal states. Following the two most crucial stages related to the use of national resources – namely, the attraction of Western investment and technology as well as the construction of necessary export pipelines – the legal status of the Caspian Sea will be resolved. Both Azerbaijan and Turkmenistan, linking their future with income from oil and gas, face the biggest challenges to effective use of income. Will energy income be used to build normal nation-states or to strengthen the ruling regimes? This is the main issue.

TRANS-CASPIAN GAS PIPELINE: PER ASPERA AD ASTRA

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Over the last year, the changing situation around the Trans-Caspian Gas Pipeline (TCG) construction project has affected attitudes of both official project lobbyists and potential participants. Most significantly, the signing of an agreement on the TANAP pipeline linking Turkey and Azerbaijan brought adjustments to the architecture of the Southern energy corridor.

The politicization of both Nabucco and TCG beginning in the end of 2011, without which the construction of the planned 30 bcm per year foreground European project would be de facto impossible, began in September 2011 with the European Council's mandate from the European Commission to hold legally binding negotiations with Azerbaijan and Turkmenistan on the Trans-Caspian gas pipeline.

To date, the documents under discussion (including an intergovernmental agreement by which the Turkmen quota of the Southern energy corridor project was to be defined) are still under preparation and the Nabucco project, in its original form, has lost relevance. Instead, a new, more realistic project, which is three times shorter in length, one-third smaller in capacity, and much cheaper, has been proposed. Nabucco-West is now considered an organic extension of TANAP, which has become a reality, despite the fact that construction has not yet begun.

At the same time, due to evident changes in the infrastructure of the Azerbaijani-Turkish gas pipeline, it's important to understand what Baku and Ashgabat, as owners of the necessary resource base, will refer to when making a decision on their participation in Trans Caspian gas projects. Do they really need them?!

Analyzing the history of both trans-Caspian and Caspian gas transportation projects may create the feeling that they are nothing more than mythical weapons, instruments of influence for both external and Caspian actors in the emerging Caspian Sea region balance of power. However, the degree of each myth is completely different, as well as the extent of their potential realization. Let's say, the Caspian pipeline project took a confident place after Russian President Dmitry Medvedev's visit to Turkmenistan in the fall of 2010, despite the fact that the prospects for its implementation, whether political, financial or economic, were much higher than for the TCG project.

It is worth recalling that the trans-Caspian gas pipeline project was first discussed in 1996. Two years later, the U.S. government had allocated $ 1.3 million for a feasibility study involving the supply of gas from the eastern fields of Turkmenistan to Erzurum in Turkey. The construction of the pipeline was expected to be completed by 2002, but the Turkmen side stopped all work on the project in 2000 and virtually all of the international companies involved quit the project. Resuscitation of the TCG construction idea came about in 2006, driven by Russia and Ukraine's "gas wars". In 2010, the U.S. once again allocated $ 1.7 million for the preparation of a new feasibility study including the possible participation of Kazakhstan, this time however, the money went to Azerbaijan.

Austrian OMV and German RWE evaluated construction options for TCG and actually reached out for project partners who would be engaged in the implementation and operation of this pipeline from December 2008. However, as is now apparent, there are no real investors willing to invest in the project now, or likely in the future considering a number of certain circumstances.

The pre-investment project evaluations of the trans-Caspian gas pipeline will only be carried out during the winter of 2012/2013 because the International Tender Commission has still not completed an evaluation of each candidates' financial proposals. This more that fifteen year old "mark time" has a number of quite objective reasons, which eventually take on new shapes.

First, the realization of the project has been hindered by the opposition of Russia and Iran, which are opposed to any trans-Caspian project without the consent of all of the Caspian states. Iran and Russia reference the fact that the legal status of the Caspian Sea has not yet been settled, that seabed pipeline construction is fraught with a possible environmental disaster, and that there is a high potential

for destructive seismic instability of the region (earthquakes in the Caspian Sea occur almost every month).

The appeal of Russian and Iranian officials concerning environmental issues is a valid argument because of the Caspian Sea's "closed nature". However, the argument is weak because of the counterargument that Russia, itself, has actively engaged in laying pipelines on seabeds during the implementation of its own gas transportation projects.

Secondly, no matter how forceful is the European Commission's support of the project, all of the parties in the possible TCG construction conflict understand that the EC is a political not commercial body. Although, first and foremost, the project requires political support from the EU and the U.S., the economic feasibility and commercial components of the pipeline are not determined by the EC. Considering the current economic situation in the Euro zone, neither a large investor such as Gazprom, nor especially a group of national investors, is unlikely to consider such a risky project as the TCG.

Moreover, today's crisis in the Euro zone and especially in the southern European states, the potential consumers of Caspian and Central Asian "blue fuel", demonstrates that Europe is no longer unified.

The international financial crisis, which has not been customary to speak about during the last two and a half years still hasn't come to an end. On the contrary, it is deepening and gaining momentum. Many people remember how "United Europe" behaved with gas consumption in 2008-2009 and it should not be excluded that this behavior will be re-established in the current situation and even acquire new features that are negative for energy producers.

Furthermore, energy producers cannot look to the folding of European nuclear energy programs, which many observers see as a salvation for oil and gas exporters. The recent rapid growth of alternative energy in Germany and the now ubiquitous "shale revolution" has increased the commercial appeal of unconventional sources of gas since the beginning of the Nabucco project. In fact, the European Energy Commissioner Gunther Oettinger pointed out that "investing in infrastructure is not as attractive as it was five years ago."

Thirdly, the cost of projects by which "blue fuel" will be delivered to the European consumer, is also an important issue, both for Europe and the State Oil

Company of Azerbaijan, which controls fuel production from Azerbaijani fields, and Turkmenistan, whose gas would be pumped through TCG.

Thus, we cannot yet say what the final cost of Nabucco-West will be, but based on the cost increase of its predecessor, it will not cost less than the Azerbaijani-Turkish TANAP project, whose cost has already risen from 5 billion Euros to 7 billion Euros. Furthermore, the underwater part of the Nabucco project (in fact the TCG with length of 300 km), was previously estimated by BP at a minimum cost of €5 billion. Considering the length of the pipeline and the transit magnitude, Turkmen gas will have to travel up to five thousand miles from source to final consumer and will be quite expensive.

In fact, this is equally true of Azerbaijani gas as well. An evaluation made by German company RWE in 2010 put gas transportation costs for fuel from the "Shah Deniz" field through Nabucco (excluding fuel gas costs and CO2 emission charges) at 77 Euros per one thousand cubic meters. In order to pay Baku a comparable price, gas buyers for transportation through Nabucco would have had to sell gas at Baumgarten at a price 50-70 dollars higher than current Gazprom contracts. Therefore, even Azerbaijani gas pumped through Nabucco, would be inferior to Russian gas in its final cost. In other words, according to calculations made in 2010, construction of Nabucco was not commercially viable, and the last two years have confirmed this fact.

In the case of TANAP and Nabucco-West the situation will most likely change in respect to Azerbaijan, but there is no such confidence from potential investors in respect to Turkmen gas, hence the delay. Ultimately, it is always possible for Russia to make the TCG construction economically inexpedient, for example, by agreeing with Europe to lower the “blue oil” prices, or by resuscitating the Caspian pipeline project, which however, is less likely to happen.

Fourth, until recently, there has been no public evidence of changes to Ashgabat’s previously stated position that "Turkmenistan sells its gas at its border." In practical terms, this means that Turkmenistan, knowing that it will not be allowed to sell its gas to a final consumer, is not going to invest in any infrastructure outside its territory and take responsibility for protecting the environment and ensuring security. Consequently, this attitude increases the risk of the project.

At the same time, the EU mediated negotiation process is proceeding as evidenced by the last Azerbaijani-Turkmen negotiations. The negotiation process

began back in mid-April 2012, when the Foreign Ministry of Azerbaijan and an expert group held a meeting on the delimitation of the Caspian Sea between Azerbaijan and Turkmenistan. The meeting included national delegations led by Deputy Foreign Minister Khalaf Khalafov from Azerbaijan and chairman of the State Enterprise for the Caspian Sea Issues under the President of Turkmenistan, Mirat Atajanov. A number of issues including Caspian delimitation as well as an extensive exchange of views on the Caspian Sea Legal Status Convention were discussed during the meeting. This meeting took place against the background of a much-discussed issue of natural gas supply from Turkmenistan and Azerbaijan to the EU, as well as the prospect of a possible merger of Azeri and Turkmen gas potential in order to create a common gas market capable of competing with the Russian market. These discussions followed a conference held in Berlin in March 2012 where energy issues between Turkmenistan and the European Union, and in particular, the prospects of the TCG pipeline, were discussed.

In the context of TCG negotiations, it is worth considering the reasons behind a recent escalation in relations between Baku and Ashgabat over the disputed fields in the Caspian Sea (without desperately looking for a third country's "hand"). The relationship between Baku and Ashgabat is the fifth reason having a direct impact on the future of the TCG. Each party seeks to legally validate their position, but the price for this is quite high: a divestiture of the Caspian Sea shelf (and hence, the future of revenues and the resource base) in anticipation of signing a contract with the EU on the launch of the Trans-Caspian pipeline in late 2012.

Azerbaijan's energy minister Natig Aliyev stated back in May that according to the agreement on the Trans-Caspian gas pipeline construction, part of the gas to fill the pipeline is planned to be produced from the disputed fields. Thus, if the ownership issue is not resolved, gas pipeline construction across the Caspian seabed between Turkmenistan and Azerbaijan will be impossible.

So far Baku, despite protests from Ashgabat, is engaged in legitimizing its presence in the disputed sectors of the Caspian. In mid-July, SOCAR head Rovnag Abdullayev said that the basic commercial principles for the development of deep-lying gas in the "Azeri-Chirag-Guneshli" (ACG) field in Azerbaijani sector of the Caspian Sea have been agreed to. By the end of 2012, SOCAR plans to sign a corresponding agreement with all the participants, including BP as the operator of the ACG project.

Parallel to this, Azerbaijan continues to hint to attentive observers interested in the TCG launch, that construction of "the pipeline depends more on Turkmen side" and that "this mega-project requires further detailed discussion, especially considering the fact that it is in large interests of European Union and European Commission." In particular, SOCAR Vice-President Tofik Gahramanov, when leaving Turkmenistan, stated that the obligation to fill the pipe with necessary volumes of gas and the need to provide material resources for TCG construction should be shared.

Interestingly, that tone of statements made by Natig Aliyev, one of the key players on the TCG from the Azerbaijani side, varies from time to time. For example, in September the Minister spoke reassuringly about Azerbaijan's readiness to give a favorable regime for the transit of Turkmen gas, reversing earlier statements made at a time of escalating conflict with Ashgabat over disputed deposits, where he replied that Azerbaijan is not interested in the Trans-Caspian gas pipeline. Thus, the sixth factor concerning the TCG is the necessity of Turkmen-Azeri cooperation at all. According to Natig Aliyev, Azerbaijan has enough volume of its own gas for supply to Europe, and there is no urgent need to connect Turkmen gas to the Southern Energy Corridor. Such a statement by Aliyev is justified considering Azerbaijan's plans to increase gas exports by 2030.

It is worth recalling that the cancellation of the Trans-Caspian project in 2000 was also due to the failure of Haydar Aliyev and Saparmurat Niyazov to come to an agreement on the volumes of gas to be pumped through the territory of Azerbaijan. Considering Baku's long-term plans for the development of existing gas fields, it becomes clear that even without Turkmen "blue fuel", Azerbaijan will need to develop its pipeline capacity. It's not without reason that options for increasing flow capacity through existing transportation infrastructure (for example BTE or SCP) and construction of the new TANAP gas pipeline are currently being considered. These steps are necessary at least for maximizing performance of the existing "Shah Deniz" field, bringing its production level up to 60 bcm a year and maintaining this level for at least for 15 years. Taking into account the constantly updated reports on deposits of natural gas in "Absheron", even with a power increase of the existing BTE from 16 billion cubic meters to 32-37 billion and the construction of TANAP, there will be no space left for the declared volumes of Turkmen gas.

Moreover, according to Natig Aliyev's spring statement, the TCG will be a separate system and it will not be joined to infrastructure of the Shah Deniz (SCP pipeline). This could mean that the entire gas pipeline network will have to be built "from scratch", thus noticeably affecting both the project value and the future gas price on the "European end".

In any case, even if the TCG is realized, new negotiations on the transit of Turkmen gas will have to be conducted not only through Azerbaijan, but also through Turkey.

Thus, Baku's assertion that Azerbaijan is ready to act as a transit country for gas extracted from the east coast of the Caspian Sea is rather a bargaining chip than a real intention.

Finally, the seventh factor: despite commonly cited public information about the "gas wealth" of Turkmenistan, independent observers still express skepticism about the TCG's resource base.

The maximum estimated gas volume in the "Galkhinish" field, which in addition to other uses is also considered as a resource base for the TCG, is 26.2 trillion cubic meters. This figure is supported by second stage results from an independent audit conducted by the British Gaffney, Cline & Associates company, according to which, reserves are estimated within the range of 13 to 21 trillion cubic meters. However, another evaluation by McKinsey& Company suggests that the development of the "Galkhinish" field will be extremely expensive, increasing final costs of Turkmen "blue fuel".

In addition, we should not overlook the fact that new production of Turkmen gas is increasingly purported by China. In July of this year, Turkmenistan and China held intergovernmental negotiations in Beijing during which the sides discussed issues of further cooperation for expansion in the fuel and energy sector. In particular, the two sides talked about increasing volumes of Turkmen gas supply to China up to 65 billion cubic meters a year.

The real resource base for TCG is the gas produced in the Turkmen Caspian shelf, the volume of which is clearly far from the claimed numbers of 40 bcm.

Considering all of the issues, the TCG project remains largely mythical, and for many of the same reasons as it has been for its fifteen-year history. The per aspera ad astra prospects of TCG explain the quite relaxed attitude of the Russian gas monopolist Gazprom to the Azerbaijani-Turkmen gas pipeline

TANAP, despite claims by Turkish Prime Minister Erdogan and Azerbaijani President Ilham Aliyev that TANAP will also allow the transport Turkmen gas. TANAP will form the basis of the southern energy corridor and will compete with Russian "blue fuel" both in the Turkish and southern European gas markets. However, considering the initial volumes being pumped through Trans-Anatolian gas pipeline, as well as the planned construction of Russia's "South Stream", the competition of TANAP will not be threatening.

POLITICAL GAMES CONCERNING THE TRANS-CASPIAN GAS PIPELINE

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Energy security issues have become especially salient at this critical point for global economy, and many countries are struggling to increase their energy independence from Russian gas supplies. However, Russia has not been passive in this matter and is taking measures to maintain its dominant position in the European energy market. This struggle is especially noticeable in relation to the provision of gas to developed European countries.

An international conference entitled "Oil and Gas Potential of Azerbaijan and Turkmenistan: Energy, Economy, Ecology, and Strategic Alliance" was held in Baku in 2008. It was attended by senior government representatives from Turkmenistan and Azerbaijan, foreign companies operating in these countries, and various visitors from 20 foreign countries, including the then US Special Envoy of Eurasian Energy Boyden Gray as well as Steven Men.

Issues discussed during the two-day conference, evaluation of oil and gas resources Azerbaijan and Turkmenistan, regional cooperation and the development of an oil and gas complex, and international and regional investment projects.

Special consideration was given to areas of mutually beneficial cooperation in the development of a fuel and energy complex. Other areas of discussion included oil and gas exploration, field development, refining, infrastructure development and hydrocarbon transport, the use of new technologies, the realization of international and regional investment projects, and joint research projects in the fields of science and technology, education, and the environment.

It was at this point that the working environment for productive energy dialogue between Azerbaijan and Turkmenistan was established.

European countries are willing to provide and in fact already provide - support to our countries in order to construct new pipelines as well as to explore and

develop new fields, especially deeper fields where advanced technology and experienced personnel are required. If a preliminary agreement on the transportation of Caspian energy to Europe via a new route could be achieved at this conference, it would be a momentous step in the diversification of gas supplies to Europe and would significantly reduce "Old World" dependence on Russian supplies. However, the initiative to export Caspian energy to Europe must not be viewed as a move against Russian energy. In any case, European demand for oil and gas is growing annually, and alternative hydrocarbon sources are not able to meet Europe's needs. This is why Russian energy will continue to be sold in Europe as in the past. The primary goal of European states is to avoid price dictation vis-à-vis Russia, and thus provide European consumers with uninterrupted and affordable energy.

On September 2nd and 3rd, Turkey's Energy and Natural Resources Minister Taner Yildiz visited Turkmenistan to participate in negotiations on the proposed Trans-Caspian Gas Pipeline, which will run from Turkmenistan to the European Union via Azerbaijan and Turkey. During these negotiations Azerbaijan was represented by Deputy Minister of Industry and Energy Natig Abbasov, while the EU was represented by European Commissioner for Energy Gunther Oettinger.

Taner Yildiz told the press that Turkmenistan's potential participation in the Trans Anatolian pipeline project (TANAP) was on the agenda. "At the same time, transportation of Turkmen gas through Azerbaijan's territory as a transit country is also possible," according to Yildiz. Let us recall that the Trans Anatolian pipeline agreement was signed on June 26 in Istanbul, with an estimated pipeline construction cost of $7 billion. The diameter of the pipeline will be 56 inches, or 1.4 meters. The project will be implemented in four phases, with the first phase reaching completion in 2018. TANAP's capacity will increase to 16 billion cubic meters (bcm) by 2020, up to 23 bcm by 2023, and up to 31 bcm by 2026. The pipeline is designed to transport Azerbaijani gas to Turkey's western borders, with 10 bcm of the initial 16 bcm carrying capacity designated for Europe and 6 bcm for Turkey.

European support for a Trans-Caspian option is likewise clear. On September 7, 2011, the European Union gave the European Commission a mandate to negotiate a legal basis for the Trans-Caspian Gas Pipeline with Azerbaijan and Turkmenistan. The pipeline will link the Caspian coasts of Turkmenistan and Azerbaijan in order to export gas to Europe via Azerbaijan. By route of Tengiz (Kazakhstan) – Turkmenbashi (Turkmenistan) – Baku (Azerbaijan) – Tbilisi

(Georgia) – Erzurum (Turkey), the pipeline is slated to transport 20-30 bcm of gas per year, with a projected project cost of 7.9 billion Euros.

Understandably, the main obstacle to the implementation of the Trans-Caspian Gas Pipeline is Russia. Russia is not interested in the realization of this project, and it will continue to hinder its realization. Russia's main arguments against the pipeline are environmental in nature, though environmental concerns are just the tip of the iceberg.

As for Turkmenistan, the country's government skillfully uses intrigue in matters of energy transport. Pursuing an ambiguous and noncommittal policy, Turkmenistan uses energy transport as a trump card in negotiations with China, India, and Russia. Turkmenistan has signed contracts to supply gas to China at a volume of 25 bcm. Thus, in the immediate future, Turkmenistan will deliver a total of 65 bcm to China per year. By increasing gas exports to China, Ashgabat is reducing its dependence on the Russian market on the one hand, while providing competition for Gazprom in the Chinese market on the other.

In 2011, Turkmen gas finally reached the southern regions of China. Turkmen President Gurbanguly Berdimuhamedov visited the city of Shenzhen, where he took part in the opening ceremony of the 8700 km long, $22 billion pipeline by which Turkmen gas will be delivered to the Chinese province of Guangdong. This, however, is not yet the limit.

According to records from China National Petroleum Corporation (CNPC), Chinese imports of Turkmen natural gas will reach 30 bcm by mid 2012, and by 2015, Turkmenistan-China pipeline capacity will increase to 65 billion cubic meters. Neighboring Kazakhstan and Uzbekistan, which are likewise providing gas to China, will also be further integrated into the project. By the end of this year, the Turkmenistan-China gas pipeline will be commissioned for this purpose. Two additional pipes will be attached to the pipeline, through which Turkmen gas from the Bakhtiyarlik field on the right bank of Amu Darya will be delivered to Chinese markets. Overall, Uzbekistan will supply China with 10 bcm of gas per year, while Kazakhstan will provide 12-15 bcm. Moreover, the continued development of Turkmenistan's Southern Yolotan-Osman field will be taken over by China.

In effect, Turkmenistan has made up for its loss of the Russian market. Gazprom was Ashgabat's biggest customer, buying up to 42 bcm of Turkmen gas per year and subsequently reselling it to Europe. Ashgabat repeatedly blamed the company for abusing its monopoly and tried to enter new markets

independently. Searching for alternative consumers thus became necessary for Ashgabat. The problem was solved quite quickly, as China's demand for natural gas has continuously grown.

Despite recent agreements with Beijing, Ashgabat will not ignore other areas. For one, Turkmenistan supplies up to 25 bcm of natural gas to Iran via two pipelines. There are also projects under development towards the south – for example, the TAPI pipeline to India via Afghanistan and Pakistan - and towards European markets in the west. Furthermore, despite sour relations with Gazprom, Ashgabat is in talks with Moscow about increasing gas exports to Russia. In order to dispel doubts about reserves, Ashgabat periodically cites audit results by international consultancy Gaffney, Cline & Associates, which estimated reserves of the biggest area of Galkhinish at 26.2 trillion cubic meters of gas. These reserves will be enough to meet the needs of China, India, Pakistan, Europe, and even Russia.

Turkmenistan's success in China hindered Gazprom's plans, as the Russian company had been in talks with Beijing for seven years on supplying Russian gas to Chinese markets. By 2015, China will receive 60-65 bcm of gas per year from Central Asia, along with 10 bcm of gas from Myanmar. Domestic production is also growing and the import of liquefied natural gas (LNG) from Australia is estimated to reach 44 bcm per year. All of these factors indicate that by 2015, China will have no need for Russian gas. As well, Gazprom's proposed volume of 68 bcm of gas exports to China is simply untenable, and the parties were unable to agree on pricing. In the meantime, Turkmenistan, Uzbekistan, and Kazakhstan increased their exports to meet Beijing's natural gas needs.

Thus, through a noncommittal policy towards the Trans-Caspian Gas Pipeline as well as hindering Russian supply initiatives in China, Turkmenistan is cleverly implementing its gas policy and taking advantage of increasing gas prices for China, India, and Pakistan. Moreover, Turkmenistan is not only selling its gas abroad, but it is also attracting investments. China recently agreed to an $8 billion energy investment project in Turkmenistan, and India is likewise planning to invest in Turkmenistan's oil and gas sector.

In May 2012, Turkmen authorities signed the first contracts on the supply of gas to India and Pakistan via the Trans-Afghanistan Pipeline (Turkmenistan-Afghanistan-Pakistan-India, or TAPI). The agreement was signed by the state-controlled Turkmengaz, India's state natural gas company GAIL, and Pakistan's Inter State Gas Systems (ISGS). The contract details were never publicized.

The Trans-Afghanistan Pipeline will run from Turkmenistan to India via Afghanistan (specifically, through Herat and Kandahar) and Pakistan (through Quetta and Multan) with a length of 1700 kilometers. It was previously estimated that gas supplies could come online in Pakistan in 2016 and in India in 2018. Turkmenistan categorically insists on selling fuel at its borders, thus the other TAPI member states will have to agree on transit issues among themselves.

In order to make TAPI operational, the Galkhinish field – the world's second largest source of gas reserves, according to Gaffney, Cline & Associates – is slated to become the pipeline's primary source of natural gas. Ashgabat earlier reported that nearly one trillion cubic meters of gas is needed over a 30-year period in order to realize TAPI; Galkhinish reserves are estimated at 13,1-21,2 trillion cubic meters of gas.

The Trans-Afghanistan Pipeline is scheduled to pump 90 million cubic meters of gas on a daily basis. Of this volume, Afghanistan will receive 14 million cubic meters, while India and Pakistan will receive 38 million cubic meters each.

Thus, the realization of the Trans-Caspian Gas Pipeline is most likely impossible in the near future, and though the participating countries – Azerbaijan, Turkmenistan, Turkey, and the EU – will continue to make efforts towards the project's realization, each country will also use the current impasse to its own advantage.

Vis-à-vis Russia, the EU uses this situation to avoid Russian price increases, while Turkmenistan uses its position to increase export prices and have a greater impact energy affairs between East Asia and Russia. Both Azerbaijan and Turkey desire the project's realization, as the Trans-Caspian Gas Pipeline promises economic benefits.

The realization of the Trans-Caspian Gas Pipeline is probably possible only after the Iran issue has been resolved, and the EU's ability to come to an agreement with Russia is likewise a factor. Stated simply, the realization of Trans-Caspian Gas Pipeline is not possible without the consent of Russia and Iran.

Political obstacles aside, the project's major players would do well to begin negotiations feasibility studies on the project. At this stage, participating countries should actively prepare technical documents related to the Trans-Caspian Gas Pipeline, because when the political aspect of this issue is resolved, the necessary economic and technical data for the project will already be available. This policy would significantly reduce time loss and provide for the sooner realization of the Trans-Caspian Gas Pipeline.

CHAPTER 5

Prospects for the development of gas markets in Black Sea Basin

ENERGY SECURITY OF ARMENIA: BETWEEN EAST AND WEST

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Since independence, energy security has been one of the keys to Armenia's national security. The focus on energy security stems from the serious energy crisis that the republic faced soon after collapse of the USSR. Over nearly the past 20 years, Armenia has tried to implement policies that aim to reduce energy sources dependent on regional influences. However, today Armenia, a country with a very diversified energy system, is facing another problem: energy has begun to actively influence the creation of national policy on integration with the EU. On one hand, Armenia is actively moving towards deeper cooperation with the EU, but on the other, requirements for energy security call for wider cooperation with Russia and Iran.

General state of Armenia's energy security

The first change in Armenia's energy system occurred in 1989 when the country was still a part of the Soviet Union. Under severe public pressure Soviet Armenian authorities decided to close the two active units of Metsamor (Armenian) nuclear power plant (NPP).[1] The 15 January 1989 decree № 24 issued by Armenian SSR's Council of Ministers stated: "[...] Considering the overall

[1] Metsamor nuclear power plant was located 75 km from the epicenter of Spitak earthquake, which resulted in death of more than 25 thousand people in December 1988. After the earthquake, many intellectuals and leaders of the nascent movement for independence began to establish in the public mind the belief that nuclear power is a huge environmental threat to the republic and its further functioning will leave Armenia with the threat of extinction. However, there were no expert and professional evaluations before NPP shutdown, and the decision on termination of two units was primarily political

seismic situation after the earthquake in the Armenian SSR [...] to stop the first block of ANPP from February 25th and the second block from March 18th, 1989."

The Armenian nuclear power plant was built in the late 1970s, 28 km away from Yerevan, 16 km away from the Turkish border, 60 away km from Iran and about 150 km away from Georgia and Azerbaijan. [2] It consisted of two VVER-440 reactors and by the time of shutdown produced about 80% of the electricity consumed in Armenia. [3]

Shutdown of the plant led to structural changes to the republic's energy sector as the main burden for the production of electricity fell to thermal power plants. With a stable supply of natural gas and oil from different parts of the Soviet Union, two large Armenian thermal power plants (TPPs), Razdan and Yerevan, could ensure the sustainability of Armenia's energy system. However, the break out of ethnic conflicts across the South Caucasus disrupted this vital supply of energy and brought Armenia's energy system to the brink of collapse. The supply of natural gas through the territory of Azerbaijan was ended as a result of the Nagorno-Karabakh conflict while the Georgian political and economic crisis and the suspension of the trans-Abkhazian railway linking Russia with Georgia and Armenia led to Armenia being shut off from energy from the rest of the former USSR.

1992-1994 are considered the Armenian "dark ages" because the country's power capacity produced only 10-15% of the necessary electricity to power the country, houses were provided with electricity for 2-3 hours a day, and natural gas was virtually inaccessible.

The energy crisis led to the rise in the importance of rationalism and pragmatism in political decision making, two characteristics which were sometimes of secondary importance within the independence movement. For example, the decisions to shut down the NPP and chemical plants described as hazardous for the environment exacerbated the energy crisis of the 1992-1994. Fundamental changes in the structure of Armenian economy began with the energy industry as a response to the crisis of the first two years of independence.

Major components of these changes are:

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[2] The first block was commissioned in 1976, the second - in 1980

[3] The station was designed to be constructed in a seismically active area, and its during its construction, 180 Hydro mounts of different power were installed, which helped to protect the main equipment from seismic effects. During Spitak earthquake, the station without stopping power reactors withstood 6-7 points.

1. Decision of the Armenian Government on April 7th, 1993 "On launch of recovery works and resume operation on the second unit of the Armenian NPP"[4].
2. Decision of the Armenian Government on September 9th, 1997, on the establishment of the Russian-Armenian "ArmRosgasprom", whose main objective were a restoration of Armenia's energy infrastructure and import of natural gas through the only functioning gas pipeline passing through Georgia.

At present, total capacity of the Armenian energy system is about 3500 MW, of which 2500 MW is technically available (NPP capacity is 407.5 MW).[5] The peak of power consumption in 2008, before the global economic crisis, was 1327 MW, or approximately 44% of the system's installed capacity and 53% of technically available capacity. Thus, Armenia already has a reserve of installed capacity. The share of energy produced by thermal power plants amounts to 30% of electricity production, 30% of renewable energy (primarily - HPS), and 40% for nuclear energy.

Despite today's energy surplus, the construction of a new nuclear power unit is considered a priority for Armenia's future energy security.

NPP in Armenia: between Europe and Russia

Since the re-launch of the Armenian NPP, many European countries and the EU have expressed concerns about the safety of the reactor. The shutdown of the existing nuclear power block have been an important topic in relations between Yerevan and European capitals since the late 1990s. The main reason for the EU's anti-nuclear position is the outdated technologies used in the Armenian NPP.[6]

In 2007, the European Atomic Energy Community (EurAtom) started formal negotiations with Armenia's Energy Ministry (now the Department of Energy and Natural Resources) about seeking mechanisms of closing the nuclear reactor. However, the technical format of the negotiations failed to resolve the all important issue regarding what Armenia will receive in exchange for shutting

[4] The first block could not be reconstructed largely due to the fact that in 4 years after the shutdown, most of the plant equipment has been dismantled with a variety of purposes

[5] Sarkisian V.O, Gnuni T.S. Armenian Energy System: modern status, development prospects, regional integration issues. *Eurasian Economic Integration.* 2009, November. pages. 108-109.

[6] EU calls for Armenian (Metsamor) NPP shutdown. Regnum I.A. 20 April, 2006.

down its nuclear plant in order to continue to be able to provide for the country's energy needs.

Europe offered Armenia maximum support, which included the provision of €100 million[7] in exchange for the shutdown as well as the organization of an international conference of donor countries in order to raise additional funds.[8] According to available estimates, the shutdown process will require about 240 million Euros.[9] Thus, the EU's activity will only provide partial financing of a safe shutdown. In turn, Armenian authorities take the position that the plant should operate for as long as the Republic is provided with alternative sources of energy in required capacities.[10]

In 2005, President of Armenia R.S Kocharian and Prime Minister A. Margaryan stated that the only alternative to shutdown of the existing energy block is a construction of a new power reactor. This position has been criticized by the EU, but the unwillingness of European institutions to finance alternative projects has led to a softening of the European approach. In December 2006, the European Commission ambassador to Georgia and Armenia, Torben Holtze, spoke from a more balanced position, calling for a study of all aspects of NPP construction before beginning work on the reactor, and for paying particular attention to the problem of the removal of irradiated nuclear fuel and the station's impact on the region's environment.[11]

Until recently, the biggest bottleneck to the construction of a new nuclear energy block has been the search for investors. Initially, many different countries and organizations were named as possible sources of funding: the Asian Bank for Reconstruction and Development, the U.S., Russia, France, and others.[12] Ankara is considered one of the most attractive investors in case relations with Yerevan are normalized and the the Armenian-Turkish border is opened. Such steps of reconciliation would allow Yerevan to enter Turkey's electricity market,

[7] The EU intends to provide a forum of donors to raise funds for the closure of the Metsamor NPP. *РИА Новости*. 2004, July 8.
http://rian.ru/economy/20040708/629389.html

[8] *Delovoy Ekspress*. 2005, 30 June - 6 July.

[9] Ex-Head of Russian Nuclear Ministy hopes that Armenia refuses US support in Metsamor NPP shutdown process. Regnum I.A December 6, 2007.

[10] EU will allocate 100 million Euros for Armenian NPP shutdown. Ria Novosti. June 4, 2003.

[11] Euro Commission: New NPP construction issue in Armenia requires detailed study. Regnum I.A. *18 December, 2006*.

[12] Arka I.A. 19 October 2009.

providing better electricity supply to the eastern provinces which still suffer from shortages in electricity provision (some parts of them are just beginning to be connected to the electric grid).[13] At the same time, the opening of the Armenian-Turkish border and the attraction of European investment to NPP construction would help Yerevan reduce Russia's influence and diversify the country's energy sector. However, interest among investors was reduced by the failure of Armenia and Turkey to normalize their relations. Investors are also concerned that the commercial prospects are not fully understood, that the Armenian-Turkish border normalization is still not resolved, Armenia's real share in the project financing as well as the sources from which Armenia will finance this share remains unclear, and a final evaluation of other risks has not been conducted.

On the other hand, Armenia has succeeded in using the political significance of this project. Russia's strategic interest in strengthening its own positions on the regional energy market provided a solution for the energy block's financing issues. In addition to Armenia, electricity produced in the new energy block of the Armenian NPP can also be exported to Turkey and Iran in the future.

Despite the fact that Armenia and Russia were planning to start building the new NPP in 2011, the work has not yet begun. Despite the lack of interest, Yerevan planned to organize a major conference of donors dedicated to this construction in early 2011. Following the Fukushima disaster, even those planning to come cancelled.

The Japanese nuclear power plant disaster sparked waves of protests against nuclear power in Europe and across the whole world. Strange as it may seem, Armenia, which in 1988 experienced a major earthquake in Spitak that led to a temporary shutdown of Metsamor NPP, did not see any protests, and discussions of the prospects for nuclear continue to take place in a calm and an approving tone. The relaxed attitude of society towards this problem can be explained by two main factors:

1. ***Psychological.*** **The 1989** NPP shutdown along with disruption of its gas supply through Georgia in the early 1990s caused a serious energy crisis that lasted two years. The crisis was only overcome by restarting the second unit of the Metsamor NPP in 1995. Thus, despite the fact that today, energy supply routes to Armenia are diversified (a new gas pipeline from Iran has been constructed), and Georgia, compared to early

[13] During spring of 2009, Prime Minister of Armenia T.S.Sarkisyan invited Turkey to take part in the NPP construction.

1990's, has been a reliable transit country for Russian gas for the past 10 years, Armenian society, including the majority of country's leadership, still psychologically believe that a shutdown of the NPP will result in a new energy crisis.

2. ***Political***. There is a clearly established opinion in Armenia that the presence of an nuclear power plant in the country has importance not only for energy, but also for military and political reasons, especially as Turkey and Azerbaijan officially insist on shutting down the Metsamor NPP.[14]

Thus, even following Fukushima there was no significant critical review of the threats and risks of nuclear power in Armenia. Yerevan's official position has not changed, and the government continues to act from a position that nuclear power plants will continue to be built in the country. On April 20, the chairman of the State Committee on Nuclear Safety Regulations, Ashot Martirosyan, stated that: "Until yesterday, Armenian authorities have repeatedly said that the situation at the Japanese Fukushima will not affect the implementation of country's energy policy. The program reckons for the construction of a new unit of Armenian NPP, and it should indeed be built."[15] As for the seismicity of Armenia, the earthquake threat for the NPP has been ruled out by officials in Yerevan. In particular, Zaven Khlghatyan, the head of the Centre of Seismic structures of the Ministry of Emergency said that, "In the Soviet Union people were well aware that Armenia is in a seismically active area, so all features of the terrain were taken into account during construction.[16] Khlghatyan's statement reflecting the technical criteria for the construction of Metsamor NPP actually speaks to the quite vulnerable situation of Armenia's nuclear energy. During discussions of NPP safety, Armenian officials refer to documents left from the Soviet period, as post-Soviet Armenia has not yet developed services responsible for the condition of a nuclear power plant. Current security issues are still handled by the Russian experts who are responsible for the operational management of the station.

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[14] Azerbaijan is worried about the NPP in Armenia //http://www.georgiatimes.info/news/55176.html,
Turkey continues the campaign against Armenian NPP// http://www.rosbalt.ru/kavkaz/2011/03/21/830475.html

[15] Armenian Government has no intentions to cancel construction of a new energy block in the NPP// http://www.panarmenian.net/rus/economy/news/67727/

[16] Armenian NPP can withstand earthquake of 9 points – seismologist // http://www.newsarmenia.ru/society/20110315/42413102.html

Armenia's current nuclear project consists of two main components: 1) closing the current Metsamor NPP with VVER-440 reactor by 2016, and 2) construction of a new energy block with a VVER-1000 reactor, also by 2016. However, these plans have been altered over the last year. In February 2011, the Armenian Energy Minister said that ***the current unit of the Armenian nuclear power plant will be held operational until a new one is built.***[17] This new position is a substantial change to the Government's previous decision to close the existing units in 2016, regardless of the progress on the construction of the new block. Secondly, the failure of the planned Ministry of Energy conference of donors has actually led to a postponement of a new conference to an indefinite date, and the freezing of the construction process. The conference was a key part of raising the needed 5 billion U.S. dollars for the construction of the plant.

It has become clear that a new energy block will not be built in Armenia by 2016-2017, and if we consider this fact within the context of the Energy Minister's statement, the Metsamor NPP's existing block will not be out of service by 2016. It is difficult to accurately estimate to what extent the failure of the donor conference is related to general international skepticism about the prospects for nuclear power, or due to other reasons connected with the plant's economic outlook. Firstly, Armenia has not yet decided where electricity from Metsamor NPP will be exported. The Republic itself doesn't need the expensive electricity generated in a station valued at $5 billion ($6 billion in 2012) because the thermal power plant working on cheap Russian gas and hydro power plant can ensure the country's domestic demand for electricity. Exporting electricity to the promising Turkish market is impossible while the Armenian-Turkish border remains closed, limiting interest of potential investors in the new energy block of the ANPP. A further question remains, however, even if Armenian-Turkish border opens, are there any guarantees that Turkey will indeed be buying the expensive electricity produced at the new Armenian NPP?

There is of course a possibility of establishing large volumes of exports to Iran. However, in this case Yerevan will be put in the unpleasant situation of establishing nuclear cooperation with a country whose nuclear program is under UN sanctions. On the other hand, Iran can start buying electricity from Armenian NPP based solely on the political components of such a purchase: Yerevan will

[17] Armenian NPP will be operated until construction of the new energy block – Energy Ministry // http://www.atominfo.ru/news4/d0761.htm

lead a more cautious policy of rapprochement with the West and will be more tied to Tehran economically.

Construction of a Iran-Armenian gas pipeline: Yerevan's eastern choice

The construction of the Iran-Armenian pipeline, which can provide Armenia with up to 2.3 billion cubic meters of natural gas annually, (approximately Armenia's annual consumption), should be considered as one of Armenia's major achievements in energy security. Today, with the stable operation of the trans-Georgian pipeline, Armenia is not in need of Iranian gas, and natural gas from the Iranian gas pipeline is used to produce electricity which is exported back to Iran. However, the Iranian pipeline is important as an insurance policy to any possible interruption of Russian gas supplies. For now however, Iranian gas will not become an alternative to Russian gas as long as Russian gas is delivered to Armenia in a stable regime.

At the same time, the construction of the pipeline was intended not only to insure against acts of force majeure, but to also play an important economic role in Armenian-Iranian intergovernmental relations.

Despite the fact that Tehran immediately established close relations with Yerevan following Armenian independence, Armenian-Iranian relations over the past 15 years have been primarily political. Armenia needed Iran for quite a long time in order to avoid complete blockade. In the first half of the 1990s, when the transit of goods through Georgia was under threat, Iran even became a major economic partner of Armenia a short period of time and an important road for the import of goods. It was at this time when the flow of Iranian trade capital into Armenia became an important factor in the socio-economic life of the country. However, the second half of the 1990s saw the stabilization of the situation in Georgia and the resumption of trade and economic relations with its former partners. Russian investments in Armenia and the formation of its own national capital sharply reduced Iran's economic and transit role.

Under these circumstances Armenian-Iranian relations in the late 1990s lost their economic and social importance, maintaining only political significance. In the absence of major joint economic projects, political ties became the most important links between these two countries until the construction of the Iran-Armenia gas pipeline. The pipeline, through which Armenia began to import of strategic importance raw from Iran and allowed the start of electricity delivery from Armenia to Iran, became a catalyst for the development and strengthening of multilateral Armenian-Iranian cooperation. Such economic cooperation went

beyond political ties that aimed only at deterring common opponents and competitors in the region.

In the long term, due to its role in the creation of a common regional electricity power market, Iran can become a transit route for Armenian electricity to the promising markets of the Middle East.

Russia-Armenia gas pipeline

In the past two years, one of the most discussed issues of Armenia's energy security was, perhaps, the Georgian government's privatization of the Armenia-Russia gas pipeline passing through Georgia. The importance of this privatization stems from Azerbaijan's interest in buying this gas pipeline through its State Oil Company. Azerbaijan's chances of purchasing the gas pipeline are high because:

1. Georgia's energy sector is directly dependent on Azerbaijan.
2. Of all regional energy companies, only the State Oil Company of Azerbaijan (SOCAR) has sufficient financial resources to purchase this gas pipeline from Georgia. Armenia's largest energy company "ArmRosgazprom" does not have enough funds to compete with SOCAR for the purchase of this pipeline.

ArmRosgazprom's lack of resources is partly related not to the company itself, but to the social situation in Armenia. Despite the fact that the company has provided for the import of cheap Russian gas to Armenia, ArmRosgazprom failed to provide gas within Armenia at a price with which it would be able to accumulate sufficient funds for foreign investments. The company operated with minimal profits, having a beneficial impact on the country's economic development, but, on the other hand, keeping it from being able to buy vital regional energy infrastructure.

However, after negotiations between the Prime Ministers of the two countries, N. Gilauri said that the government of Georgia will never sell the controlling stake of the gas pipeline. Georgia's position on this issue probably comes from the fact that Yerevan has managed to persuade Tbilisi of the sharply negative impact of the pipeline sale. However, it should be understood that the deepening of Georgian-Azerbaijani cooperation can create serious adjustments in Tbilisi's position.

In case of SOCAR taking control over the gas pipeline, Armenia's entire power system will become dependent on the Iran-Armenia gas pipeline, which would put an end to Yerevan's policy of EU integration.

In summary, significant and largely successful work has been carried out to ensure Armenia energy security over the last 20 years. However, energy security is a never-ending and constantly changing process that must continually respond to new threats and challenges. Policy thinking on correct and timely responses should never stop and the energy policy vision must constantly adapt and cannot be deprived of flexibility.

SEE SECURITY OF GAS SUPPLY: MAIN CHALLENGES AND PERSPECTIVES WITH A FOCUS ON BULGARIA

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1. Introduction

The Russia-Ukraine gas transit crisis of January 2009 has posed serious economic, geopolitical and humanitarian questions about security of gas supply throughout Europe. Although energy security and diversification have major pan-European implications, the 2009 developments had the most significant impact – in terms of consumers who actually lost their gas and heating supply – in a few countries in the region of South Eastern Europe (SEE), thus making discussions about SEE energy supply security a topic of particular regional significance. The current paper studies, the issues of gas supply security in the SEE region through the prism of possible strategic solutions – namely different international pipeline projects, regional integration through interconnectors, gas storage, alternative infrastructure reforms and regulatory action. The ongoing discussion on security of gas supply in SEE aims to shape the future of the region's gas supply in the most strategically sound and economically profitable way, while still accounting for the intrinsic geopolitical and economic limitations of the countries in the region. Even more importantly, from a political and humanitarian standpoint, it is imperative that in the event of similar supply problems in the future, the citizens of the SEE countries do not find themselves in the same unfavorable position as it was the case in January 2009.

It should be noted that the issue of gas supply security in SEE has been extensively discussed in recent years; however, conclusions, attitudes and political stances get continuously revised due to the significant intensity of events surrounding the topic as well as the scope and complexity of divergent economic and geopolitical interests within and about the region. This has also been the case

in the first half of 2012 as the ratification agreement between Turkey and Azerbaijan was signed for the construction of the Trans –Anatolian gas pipeline (TANAP). Announced as a project of immediate priority to Turkey, Azerbaijan and the Shah Deniz II consortium, TANAP might ultimately provide the real alternative to Russian gas supplies in the SEE region possible by connecting to one of the smaller Southern Corridor pipelines in the region.

2. Security of Supply: Definitions

According to the official definition of the European Commission, security of supply "can be defined as a guarantee of supply of goods and services sufficient for a Member State to discharge its defense and security commitments in accordance with its foreign and security policy requirements."[1] For the purposes of this paper, security of supply has been identified more narrowly as "the ability of an energy system to meet demand in the event of supply disruption, as well as to cope with normal fluctuations in demand patterns."[2] Supply security is therefore a wider notion than the need to achieve diversified supply portfolio; in that respect it is a notion that goes beyond availability and reliability and touches on issues such as affordability and sustainability of energy.[3] For the purposes of this paper, security of gas supply is specifically taken to mean the ability "to source alternative gas to make up for disrupted volumes."[4] This definition does not constitute that all missing gas needs to be replaced by gas coming from alternative sources; shifting to reserves and to alternative fuels such as oil products for heat or electricity generation is considered here as an option to increase the security of gas supply.[5] In other words, "import dependence in itself is not a sufficient indicator of security of supply."[6] Instead, the key words that

[1] **European Commission:** *Directive 2009/81/EC on the award of contracts in the fields of defence and security: Guidance Note Security of Supply*,
http://ec.europa.eu/internal_market/publicprocurement/docs/defence/guide-sos_en.pdf

[2] **Giamouroudis, Paleoyannis (2011**): *Security of Gas Supply in South East Europe: Potential Contribution of Planned Pipelines, LNG, and Storage,* The Oxford Institute for Energy Studies, The Oxford University

[3]**Denitza Mantcheva, Ruslan Stafanov, Center for the Study of Democracy (CSD, 2012):** *Energy Security in Bulgaria*, Draft Version, Center for Study of Democracy, Bulgaria

[4] **Noël, Silve (2011):** *Cost Curves for Gas Supply Security: The Case of Bulgaria,* EPRG Working Paper, Cambridge Working Paper in Economics

[5] Ibid.

[6] Ibid.

best describe the notion of gas supply security are not only source diversity but also transit and technology reliability, and a specific characteristic best described by the quality and response speed and readiness of switching and changing between fuels in case of emergency capacities, also called the 'switchability' of a country's energy system. To further compliment a comprehensive understanding of the notion of security of supply, attention should be drawn to issues such as price security, transit and facility dependence.[7]

3. Gas Supply Security Position of SEE countries

3.1. Common Regional Challenges

For the purposes of this paper, the SEE region is meant to include the countries of Albania, Bulgaria and all states of former Yugoslavia, except Slovenia and Croatia. Romania and Greece are excluded from the analysis as they hardly face the same challenges as the other SEE countries since, for example Romania produces, stores and consumes more natural gas than the wider SEE market as a whole,[8] while Greece has a different level of gasification and gas market infrastructure development. On its side Croatia has achieved good success in terms of diversification of its gas supply sources and it is also excluded from the analysis current analysis. Some main challenges could be summarized as follows (not in order of importance):

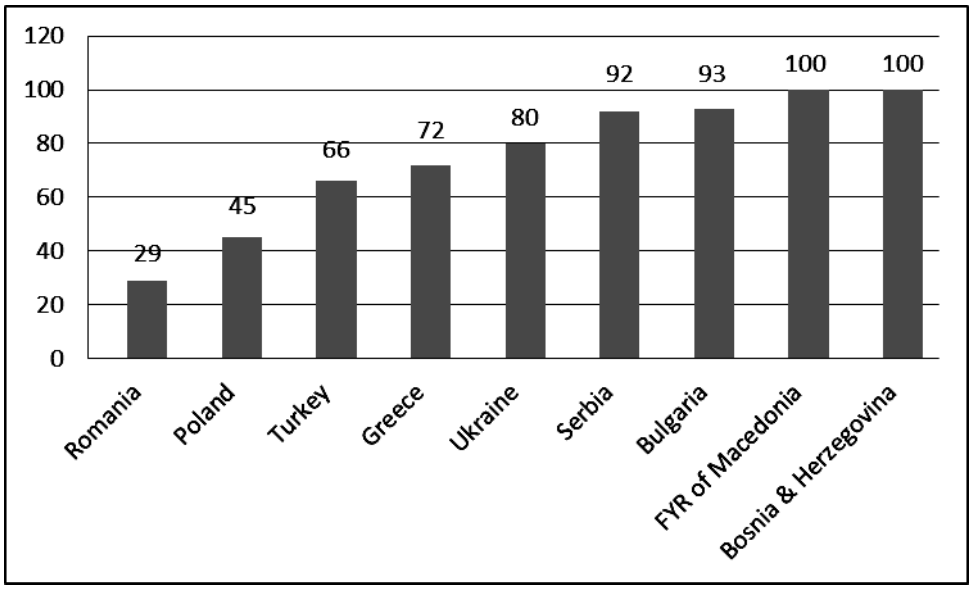
- Poor (almost non-existent) indigenous natural gas resource base;
- Lack of substantial reserve capacity;
- Almost 100% import-dependency on Russia (see Figure I);
- Insufficient regional gas integration;
- Project overlap and challenging economics;
- Inadequate residential heating and industrial infrastructure;

[7] **Anouk Honore, (2010):** *European Natural Gas Demand, Supply, and Pricing: Cycles, Seasons, and the Impact of LNG Price Arbitrage,* The Oxford Institute for Energy Studies, The Oxford University

[8] **Giamouroudis, Paleoyannis (2011**): *Security of Gas Supply in South East Europe: Potential Contribution of Planned Pipelines, LNG, and Storage,* The Oxford Institute for Energy Studies, The Oxford University

- Governance issues: history of strong Russian power structures, inefficient bureaucracy and rent-seeking behavior in state-owned energy sectors;
- Limited geopolitical significance leading to lack of bargaining power in negotiations over strategic international projects

Figure I: Dependence on Russian Gas in Central and Eastern Europe



Source: Multiple
Note: Montenegro and Kosovo currently ungasified

In the SEE region, indigenous supply is essentially limited only to Romania and Croatia (to smaller extent). Meanwhile, **access to alternative supplies such as LNG and Caspian gas remains severely constrained**. Current non-Russian supply in the region could possibly come through Greece's Revithousa terminal, using gas imported, transported and liquefied in Turkey to the southern Greek port, yet, there are currently no interconnectors between Greece and its Northern SEE neighbors. Croatia has the only additional non-Russian pipeline connections to Italy and eventually Hungary.

The number of interconnectors between Balkan states is insufficient to meet supply disruptions, so regional integration should be considered a top policy priority in the strategy for enhancing gas supply security in the region. For

example, the 2009 crisis was "to a large extent not the result of an aggregate lack of supply but rather of poor integration and exchanges in the region."[9] As a response the European Commission has outlined plans for strengthening the internal market in gas and has also set aside financial resources for building interconnectors in the SEE region.[10]

SEE countries have almost no gas reserve capacity due to protracted policies and communist legacy but also very often as a result of geological incompatibility. From the countries in the region regarded by this paper **Bulgaria (Chiren) and Serbia (Banatski Dvor)** are the only ones having existing gas storage capacities; favorable conditions for the development of reserve capacities exist also in Albania and Bosnia & Herzegovina but these are far from realization.

From an international and European perspective, the most important aspect of diversifying Eastern, Southern, and Central European gas supply sources is the development of large international pipeline projects for the supply of Caspian and Middle –Eastern gas and in particular the EU's Southern Gas Corridor. However, because of their limited geopolitical as well as market bargaining power (consumers and producers with negligible weight in European gas markets), SEE regional attitudes toward those projects can generally be summarized as "wait-and-see-who-will-get-there-first-and-offer-the-most". This means that **the usual framework for debate is shaped by the concurrent participation of a SEE country in rival projects such as EU-backed Nabucco and Russian South Stream, thus trying to fortify negotiation bargaining power**. The continuing economic crisis in Europe and the instability in the Middle East make the bargaining positions of the different counties even more complex and uncertain.

The inability of local governments to deal with energy security challenges is also rooted in issues with the quality and transparency of the governance of local energy sectors and the opaque Russian power structures in the region. There exist technical, legal and institutional governance problems in the energy sectors

[9] **Kovacevic (2009):** *The Impact of the Russia – Ukraine Gas Crisis in South Eastern Europe*, Oxford Institute of Energy Studies, Oxford University

[10] **European Commission (2009).** Proposal for a Regulation of the European Parliament and of the Council Concerning Measures to Safeguard Security of Gas Supply and Repealing Directive, 2004/67/EC, COM (2009) 363/4. European Commission, Brussels, 16 July 2009, available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri¼COM:2009:0363:FIN:EN:PDF

of the countries in the region.[11] For example, in Bulgaria these include management problems of state owned energy monopolies; conflicts of interest at all administrative and political levels; insufficient strategic planning in the sector; lack of cost-benefit consideration of energy policies and infrastructure projects;[12] lack of transparency and prevalence of corruption in the energy sector, strong local and foreign lobbies opposing diversification, etc.[13] Opacity of the energy sector in the region remains the rule. There also remains a lack of a transparent framework that sets out deadlines, responsibilities, costs and regular analysis of strategies. Little information is made available to business and domestic energy consumers on how large infrastructure projects will affect their prospects and on future price developments, which affects negatively energy security. Energy strategies of countries in the region have been ratified but often lack details regarding how the objectives contained within will be achieved.

3.2. Country Profiles

Albania

General Facts: Supply, Demand, Gas Grid Development

Albania does not have any reliable indigenous gas supply sources, although until the end of 2007, some gas fields were available in the southern part of the country. Albania's gas system is practically out of use, due to the very low level of gas availability. The Albanian gas industry has been severely restricted, with a total of 400 km of pipelines linking the gas fields with main industrial consumers such as TPPs, fertilizer and steel plants, etc. Albania's energy strategy involves plans about the construction of UGS, LNG (near port of Fieri) infrastructure and inclusion in international pipeline projects.

Involvement in International Pipeline Projects and Regional Interconnectors

[11] **Center for the Study of Democracy (CSD, 2011)** *Energy and Good Governance in Bulgaria. Trends and Policy Options*, Centre for the Study of Democracy.
http://www.csd.bg/artShow.php?id=15499

[12] Ibid.

[13] **Center for the Study of Democracy** (**CSD, 2009**) Better governance for sustainable energy sector of Bulgaria: diversification and security, Policy Brief No. 18, *Centre for the Study of Democracy*, October 2009, http://www.csd.bg/fileSrc.php?id=2866

At the moment, Albania does not have any international gas links. Different options, which all require extensions of the existing grid, include:

- the Ionian Adriatic Pipeline (IAP project) - supplying Albania with gas through the Northern Balkan grid, via Croatia, Bosnia Herzegovina, Montenegro;
- another option is the Trans-Adriatic Pipeline (TAP) project - supplying gas through the South Eastern part of the Balkan grid, via Turkey, Greece to Southern Italy;
- third possibility is supplying gas from the Eastern part of Balkan grid via Bulgaria and Macedonia.

Albania expressed its desire to be included in Nabucco originally and Nabucco-West later (backed by Turkey), South Stream and possibly a connection to the ITGI-system interconnector (Italy-Turkey-Greece-Interconnector). However, neither Nabucco nor South Stream projects have indicated immediate plans for the inclusion of Albania in either of the projects. Thus the TAP and IAP pipeline remain the most viable projects of choice for Tirana. However, Albanian influence over the advancement for the projects has been marginal.

Underground Storage

In Albania, there is no existing UGS facility.[14] There are plans about the construction of one near the Salt dome at Dumre with a combined reservoir capacity of about 1.1 bcm, which could make it usable by other countries in the region.[15]

Country Perspectives

Albania is unlikely to achieve considerable level of gasification in the next decade. Most probably at some point it will be connected to some of the offsprings of the Southern Corridor pipelines (TAP, IAP, SEEP, Nabucco West) or South Stream.

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[14] **Albanian Ministry of Economy, Trade and Energy**: *Gas Supply in Albania*, Gas Forum Meeting, Maribor, Slovenia (2008)

[15] Ibid.

Bosnia & Herzegovina

General Facts: Supply, Demand, Gas Grid Development

Bosnia and Herzegovina does not have its own natural gas sources so it is supplying exclusively from external sources.[16] In terms of demand, natural gas is currently available only for a limited number of customers because gas infrastructure is developed only in part of the country, and primarily in towns.[17] For 2008, industry used 58% of all gas demand, while households - only 17%.[18]

Involvement in International Pipeline Projects and Regional Interconnectors

Bosnia and Herzegovina was hit particularly hard during the 2009 Russia-Ukraine crisis as the country was served only through a 0.75 bcm/y pipeline, which connects it with Russian gas supplies through Ukraine, Hungary, and Serbia.[19] Like most other countries in the region, Bosnia and Herzegovina tries to formulate a diversification strategy but has limited ability to influence substantially any of the major options for alternative supplies. In addition, there are tensions between the Federation of BiH and Republika Srpska on the route to diversifying its gas supply sources, which additionally burdens decision making. This is not the case in terms of the big international pipelines but more so on regional interconnectors and local grid upgrades.

Underground Storage

There are no existing UGS facilities in Bosnia, however preliminary terms between Republika Srpska and Serbia have been agreed on using the newly opened Banatski Dvor UGS in Serbia.

[16] **Bosnia and Herzegovina – Energy Community:** *Statement on Security of Supply 2009*, Sarajevo, 2009

[17] Ibid.

[18] Ibid.

[19] Ibid.

Country Perspectives.

Bosnia & Herzegovina will remain under threat until later stage or at least until the construction of the planned IGTB (part of ITGI) and Bulgaria-Serbia interconnectors. In the meantime, Bosnia & Herzegovina should prioritize also developing the planned interconnection with already well-diversified Croatia. The division of opinions on geostrategic policy making between Republika Srpska and FBiH might undermine the efficiency of implementing strategic choices in gas supply security.

Bulgaria[20]

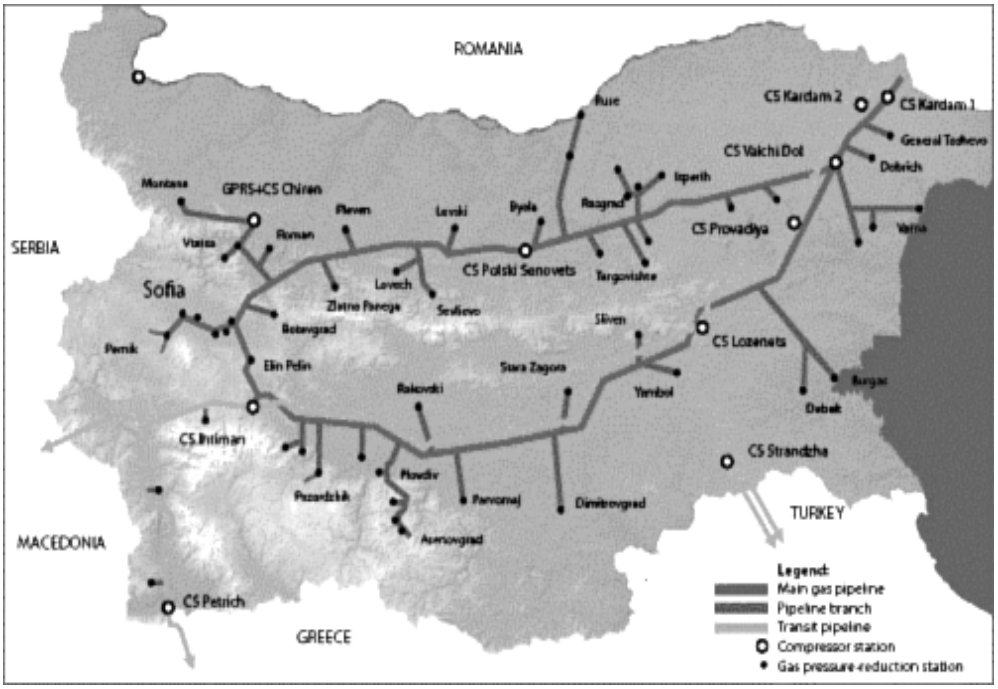
General Facts: Supply, Demand, Gas Grid Development.

Bulgaria has only limited capabilities of natural gas production, which has recently expanded by the discovery of gas in its Black Sea shelf, with more discoveries pending. Bulgaria meets almost its entire gas demand through imports from Russia through a single pipeline. Gazprom (through its intermediaries) is Bulgaria's sole supplier of gas for import and transit. The import and transit pipeline systems are physically separated (Figure II). The transit system is currently reserved for Gazprom's gas only and is not connected to the national gas transmission pipelines. Under existing contracts, Bulgaria is obliged to transit up to 17bcm annually for Turkey, Greece, and Macedonia. This was more than six times the entire internal demand for 2010. [21]

[20] The country case analysis of Bulgaria is exclusively based on internal CSD resources, any additional sources footnoted separately:

1. **Center for the Study of Democracy (CSD):** *Hydrocarbon Transit Transparency in Georgia, Ukraine, Bulgaria and Turkey: Data Assessment Report, Country Chapter: Bulgaria,* CSD, 15.11. 2011
2. **Center for the Study of Democracy (CSD):** *2011 Bulgaria Energy Policy Paper Draft,* CSD-Draft

Figure II: Gas Grid Map – Bulgaria



Source: Bulgartransgaz

Currently, natural gas is transited by Bulgartransgaz EAD through Bulgaria to Turkey, Greece, and FYR of Macedonia. As per a decision of the Bulgarian government, transit fees are retained by Bulgartransgaz EAD, though transit contracts are negotiated between Gazpromexport, Russia, and Bulgargaz EAD, Bulgaria. In December 2006, a memorandum between Gazprom and Bulgargaz EAD (the sole public supplier license-holder in Bulgaria) extended the life span of natural gas transit contracts from Russia, through Bulgaria, to third countries, up until 2030. The contract "booked" volumes of 17.8bcm p.a., with an option for additional 5bcm p.a.[22] Both Bulgargaz EAD and Bulgartransgaz EAD are subsidiaries of the Bulgarian Energy Holding EAD (BEH),[23] which is a 100%

[22] **Gazpromexpor**t http://www.gazpromexport.ru/en/partners/bulgaria/

[23] **Bulgarian Energy Holding (BEH)**, http://www.bgenh.bg/en/index.php

state-owned shareholding company that also incorporates all of the remaining state-owned companies in the energy sector.

The **very high concentration of the Bulgarian gas market** - monopoly of supply and distribution provide ample opportunities for lack of transparency and rent-seeking. More particularly, a critical problem of transparency is the focusing of resources from the gas transit in the state-owned Bulgartransgas at the expense of the national budget, which leads to deformation in price signals and in the procedures for constructing new infrastructure. What presents a very troubling case is that the bulk of information on gas transit through the country (i.e. tariffs, taxes, fees, and revenues) is not publicly available online. Unlike transit tariffs, the tariffs for transmission and distribution, as well as storage,[24] are regularly published on the web.[25] The decision of the Bulgarian government to leave the transit fee revenues with Bulgartransgaz EAD infuses an additional element of non-transparency. It prevents state authorities and taxpayers from overseeing what part of the payments go to the company for the actual transportation of gas, and what share goes to royalties for the state for using its territory for transit. Thus, independent oversight on gas transit revenues is reduced, and public understanding of the transiting company's performance efficiency is blurred. Furthermore, there is a de-facto distribution monopoly of a company, which is effectively Gazprom controlled. If EU rules enter into force – on the liberalization of the gas market, this distribution monopoly threatens to price out Bulgargas and rule the market unless Bulgaria does not apply for derogation until alternative supply routes and sources are made available.

Lastly, in theory, industrial natural gas customers in Bulgaria have the capacity of dual-fuel equipment; in terms of residential heating, Bulgaria is also supposed to have the limited ability to switch some of its gas consumption to alternative fuels during a supply interruption. Yet, the 2009 events demonstrated the lack of any effective fuel-switching capability as it took close to a week for the district heating company to shift to heavy fuel oil in Sofia. In addition, the

[24] **Bulgartransgaz,** A draft contract for gas storage, including technical specifications of the gas stored and a sample scheme for calculating the price for gas stored, is available, http://www.bulgartransgaz.bg/UserFiles/File/Dog_sahranenie.pdf. In addition, there is a database of public procurement procedures dating back to 2008, and information on licenses owned and compliance procedures followed.

[25] **Bulgartransgaz**, In line with price updates that, according to delivery contracts, should occur every three months, http://www.bulgartransgaz.bg/UserFiles/File/data/price_bg.pdf.

environmentally harmful effects of such a switch were quickly visible and could make it even harder for companies to cope with supply disruption in the future.

Gas demand in Bulgaria is locked by industry and residential heating, with household consumption remaining negligible despite promises for a strong uptake by the industry regulator and by the private distribution monopolies. In effect gas demand has been continually declining in the past decade following privatisation, closure and efficiency gains in industry, as well as reduction in central heating demand. In fact, the winter of 2012 has demonstrated sharply, that gas demand is not on the radar screen of the bulk of the Bulgarian households: rising electricity and central heating prices have resulted in households switching to woods and coal, which has led to sever pollution in cities and deficits in supplies. Thus affordability is becoming a paramount concern for the Bulgarian government in considering security of supply options.

Involvement in International Pipeline Projects and Regional Interconnectors.

Bulgaria is at the crossing point of (parts of) the two major competing international pipeline projects in SEE and plans the development of as much as four inter-connectors to all of its neighboring countries with the exception of the FYR of Macedonia. However, the country has so far not provided detailed public **cost-benefit analyses** for the different options and there is no clear cut prioritization or preferred options, which leads to unclarity and frequent (perceived) inconsistencies in the Bulgarian position regarding major energy projects.

Southern Corridor Plans

Bulgaria has voiced repeatedly its preference towards the development of the EU's **Southern Corridor** pipelines, and in particular the **Nabucco** project as part of its EU integration project. However, the country, with its very small internal market and insignificant weight in regional and/or EU policy making, can only have a supporting role in the project. As the economic crisis has persisted and has further cut government revenues and has complicated common European policies, the Bulgarian support for the project seems to have waned. Through the Bulgarian Energy Holding (BEH)'s 16.67% stake in Nabucco's consortium, Bulgaria is a founding partner in the project to bring to Europe as much as 30 bcm of gas annually. Although, Nabucco is by far the most advanced large

international project in the region, the constantly increasing prices, the unguaranteed supply capacity and the lack of strong public backing by a major European consumer states significantly reduced the viability of the original large project and led to its evolution into smaller more flexible solutions. Commercial funding was unlikely to be secured until capacity was booked and future transit fees budgeted for, which led to the creation of smaller **Nabucco-West** project. Nabucco-West is to be constructed in order to serve the same goals as the original Nabucco – bringing 10 bcm of Caspian gas to Southern and Central and Eastern Europe. However, it now seems unavoidable that a phased development would be necessary with different pipelines delivering the gas to the Turkish-Bulgarian border and another one transferring it across the region. In that context, an intra - 'Southern Corridor' competition has been created between **other planned Southern Corridor pipelines such as TAP, SEEP** (see section IV) plus eventual connection to the ITGI interconnector system. As the TAP project does not cross Bulgarian territory, it is obvious that, if affordable, a connection between Trans-Anatolian gas pipeline (TANAP) and Nabucco West would be the ultimate Southern Corridor solution for Bulgaria (discussed in detail in Section IV). **Overall**, the TANAP-Nabucco West project, which seems to be the most commercially viable project. concerning Bulgaria so far, if realized, would enhance energy security by diversification of both transit source and transit route. The project may also aid the development of a competitive national energy market, through adding competitors to the current sole supplier - Gazprom, and permitting half of capacity to be available for third party access. In addition, it might be easier for Bulgaria to influence a smaller-sized Nabucco and to foot the likely smaller bill for its construction.

Though with a varying degree of willingness Bulgaria has also subscribed to **the South Stream** gas pipeline from its very beginning. The country has even less leverage and in fact less information and clarity about the project's overall cost and viability than in the case of Nabucco.

South Stream

As of August, 2012, it seemed like Bulgaria had confirmed its participation in the South Stream project; yet, there is still lack of clarity surrounding the conditions of Bulgarian participation. It seems that for the time being Bulgaria has agreed to participate in the project without taking on any initial investment for the

construction of the pipeline. The original idea was that each side of the deal take up 30% of the investment costs and the rest be financed through loans. Currently, it seems that the Bulgarian government is proposing that the jointly owned company takes on the whole debt burden with Bulgaria transferring part or all of its due transit fees towards repayment of the loans. Official final claim from the Bulgarian side is to be delivered in November 2012.

There has not been a publicly available cost-benefit analysis of the project, both overall and for it's Bulgarian part. The latter is to be constructed by a company equally owned by Russia and Bulgaria, through Gazprom and BEH, which was set up in November 2011, following a 2009 Agreement of Cooperation between the two parties. The planned capacity of the pipeline is 63bcm, which aims to circumvent Ukraine to bring Russian gas to Europe. Bulgaria's participation is estimated to cost EUR 800m, which like in the case of Nabucco is a major stumbling block to the country's effective inclusion in the project as there is no clarity how this contribution can be provided.[26] So far **negotiations on the project have been opaque, with Russia applying considerable pressure on the Bulgarian government for firm commitment to starting construction before 2013**, while Bulgaria has been dragging its feet in the hope that the "game" is resolved at a higher EU - Russia level.

Overall, the completion of the South Stream project would improve Bulgarian energy security through the diversification of the transit route, thus reducing the potential for future gas supply disruptions resulting from disputes between Russia and Ukraine. However, it holds considerable potential to canibalise on the existing transit infrastructure of Bulgaria and will increase demands on public funds at a time when these are badly needed for other urgent social and security needs. It also holds little promise to improving the affordability aspect of energy security in the country in the future without continuing subsidies from transit towards consumption. It would have a neutral to negative effect on the stated Bulgarian Energy Strategy priority of a 'Competitive market'. Despite the strong likelihood of Gazprom being bound by the EU's Third Legislative Energy Package relating to Third Party Access (TPA) to pipelines, the adherence may be only to the minimum required by EU law; that excess capacity is opened to the market. It is even possible that there will be no excess capacity (as is the predicted case in Poland). Moreover, it is now clear that **Russia is trying actively to escape EU regulation and to play countries on one another along the route of**

[27] **European Commission:** *List of projects submitted to be considered as potential Projects of Common Interest in energy infrastructure – Gas*

the pipeline, which is likely to result in further decrease in Bulgarian leverage over the project.

Regional Interconnectors

As Bulgarian influence over major upstream projects remain very limited, Sofia has also been increasingly turning its attention to more regional approaches concerning supply, notably interconnectors with Turkey, Romania, Greece and Serbia, over which Bulgarian diplomacy could have some more influence and which should be of immediate priority in the agenda for achieving security of natural gas supply in Bulgaria. In addition **EU has provided ¾ of the funds for all interconnectors to neighboring countries, which makes the projects particularly cost effective for the country though the question of ensuring gas supplies over the planned pipelines remains.** The construction of the most advanced of these projects – the Bulgaria-Romania interconnector has just been launched (August 2012).

As a whole, **interconnections are seen as an essential part of the Bulgarian energy strategy.** Their successful realization will increase the country's energy security through enabling reverse flows of gas in the case of supply disruptions. They also contribute towards the creation of an EU internal energy market. The interconnectors' contribution to Bulgarian security of supply is two-fold: a) allowing for reverse flow emergency supplies in the case of a supply disruption from other sources (for example Russia through Ukraine to Bulgaria) and; b) enabling the diversification of import in both transit route and supply source (e.g. from the Caspian region). However, the share of pipeline capacity allocation between the countries sharing the interconnectors has not been decided yet, which together with ensuring contracts for the supply of gas have turned into a sticky point in negotiations.

The fact that despite EU funding support, it took Bulgaria more than three years after the January 2009 crisis to officially launch the construction of the first of these interconnectors (Bulgaria-Romania) shows that successful implementation of energy policies in the region face various political challenges, over and above financial and economics concerns. The fairly slow reaction of the Bulgarian government underlines the lack of administrative capacity and efficiency that could be related to reasons varying from systematic regulatory and bureaucratic limitations to by-products of certain examples of rent-seeking behavior. Sofia is also constrained by external factors such as the fact that opening the transit

pipelines to third-party trading faces a hidden political cost attached as some of the regional interconnectors are governed by intergovernmental agreements pre-dating EU accession that Russia would probably unwilling to re-open.

Underground Storage

Bulgaria currently possesses one Underground Gas Storage (UGS) facility, in Chiren (North-West of the country). There are plans for upgrading UGS Chiren to full capacity of 1bcm (more than a third of the country's annual consumption in 2012), however this will cost at least EUR 200m – funding that is not provided yet. According to the European Commission's list of projects submitted for consideration as "Projects of Common Interest" in energy infrastructure, there are also plans for the construction of a new UGS facility in Bulgaria that would increase the European crisis response capacity.[27] There are several options for construction of new gas storage facility on the territory of Bulgaria – depleted gas fields (onshore or offshore), salt cavern or aquifer.[28] The cost-benefit viability of UGS projects as a measure for improving security of supply situation in Bulgaria versus other alternative solutions is assessed in Section V.

Country Perspectives

Bulgaria is currently exposed to gas supply disruption risks but it could be expected that they will be mitigated considerably in the next 5 years. Bulgaria is involved in various national, smaller regional, and large international projects and it could not be realistically expected that the country could realize all of its gas projects in the next decade due to project overlap and challenging economics. That is why prioritization of projects is very important and thus construction of any (if not all) interconnectors between Bulgaria and Greece, Turkey, and Romania is of immediate significance in order for the country to achieve improved levels of gas supply security. As a whole, despite internal and external limitations, it could be expected that Bulgaria is on its way of avoiding its full dependency on Russian gas supply in the medium-term.

[28] Ibid.

The Former Yugoslav Republic of Macedonia (FYR of Macedonia)

General Facts: Supply, Demand, Gas Grid Development

The Macedonian gas network is fairly limited. Its main gas transmission line begins at Deve Bair in Kriva Palanka county on the border with Bulgaria which represents the country's only entry point.[29] Total length of the gas pipelines is about 160 km. Capacity of the system is 0.8bcm/y. Currently, 30 industrial consumers have been connected to the system and there is no consumption of natural gas for residential needs. [30]

Involvement in International Pipeline Projects and Regional Interconnectors

FYR of Macedonia's natural gas market has a 100% dependence on Russian supply (through its interconnection with Bulgaria. Different options for diversification include:

- creation of a "new Bulgaria-Albania axis on the South Stream pipeline;[31]
- development of a Nabucco and/or ITGI branch to tap into differentiated supply
- diversification benefits if Bulgaria proves successful in its ongoing efforts to connect to the natural gas grids of neighbours Greece and Turkey.

Underground Storage

There are no UGS facilities present in FYR of Macedonia currently and no plans for construction of gas reserves in the future have been made public.

Country Perspectives

FYR of Macedonia is currently exposed to gas supply disruptions but through its sole interconnector with Bulgaria, it could be expected that FYR of Macedonia will also avoid full dependency on Russian gas supply once Bulgaria achieves the same.

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[29] **Slavko Bundaleski** (**Energy Regulatory Commission of the Republic of Macedonia)***: Natural Gas and Regulation 1775 in the Republic of Macedonia*, March 05, 2009, Vienna, Austria

[30] Ibid.

[31] **ISI Emerging Markets**, *Macednonia wants to connect to South Stream*, 6 September 2010

Serbia

General Facts: Supply, Demand, Gas Grid Development

At the moment the only available gas sources in Serbia are the production on local gas fields in Vojvodina and import from Russia via Hungary and Ukraine (Beregovo metering station).[32] Local production satisfies less than 8% of Serbia's needs and there is no available data on domestic natural gas reserves and it is hard to expect that existing production could be significantly increased.[33] Similar to the situation in Bulgaria, Srbijagaz holds an unchallenged monopoly position in the energy sector in Serbia and is in full control of any gas grid developments. Srbijagaz also has very strong connection with Gazprom, most recently made evident by the construction of the Banatski Dvor UGS facility.

Figure III: Gas Grid Map – Serbia

Source: Srbijagaz

[32] **Ministry of Mining and Energy, Serbia**: *Security of Supply Statement of the Republic of Serbia*, Belgrade, Serbia, 2009

[33] Ibid.

Involvement in International Pipeline Projects and Regional Interconnectors

In October 2009, Serbian natural gas operator Srijagas and Gazprom established a 51%/49% consortium for the extension of South Stream to Serbia. [34] Development costs of the Serbian part of South Stream are expected to be well in excess of EUR 750m.[35] Such calculations though are highly speculativ. It is not clear whether the overall South Stream project is economically reasonable. The very low level of transparency of the project plus the lack of an independent feasibility study raises concerns over the cost and hence the financing of the South Stream project and its separate parts.

On the other hand, in March 2010, the European Commission, Srbijagas, and Bulgartransgaz reached an agreement on the construction with EU support of a two-way interconnector between Nis (Serbia) and Dupnitsa (Bulgaria). The project offers Serbia a potentially new gas source – in contrast to only a new route with South Stream – namely Caspian gas inflows and LNG through Greece and/or Turkey.

Underground Storage

In October 2011 Serbia opened its newly constructed Bantski Dvor UGS storage facility. In October 2009 the initial agreement on Setting up the JV for the Banatski Dvor UGS Facility was signed. [36] The JV has the following shareholding structure: Gazprom Group – 51%, Srbijagas – 49%. The Banatski Dvor UGS facility was created on the basis of the eponymous depleted gas field situated 60 kilometers to the northeast of the Novi Sad town. The UGS facility offers potential for further expansion.

Country Perspectives

Serbia is likely to remain dependent on Russian gas supply in the next 5-10 years. The regional effect of UGS Banatski Dvor would remain limited due to its

[34] **Giamouroudis, Paleoyannis (2011)**: *Security of Gas Supply in South East Europe: Potential Contribution of Planned Pipelines, LNG, and Storage,* The Oxford Institute for Energy Studies, The Oxford University- p.80

[35] Ibid.

[36] **B92.net**: *Banatski Dvor Facility Opened*, 21 November, 2011, Belgrade, Serbia

Russian supply. Source diversification could be achieved through the realization of a Bulgaria-Serbia and Serbia-Croatia interconnectors.

UNMIK/Kosovo

General Facts: Supply, Demand, Gas Grid Development

United Nations Mission in Kosovo (or just Kosovo) is currently ungasified but a feasibility study by the World Bank sees potential for the emergence of a 0.9bcm/y gas market in Kosovo by 2025.[37]

Involvement in International Pipeline Projects and Regional Interconnectors

Kosovo has theoretical potential for gas connectivity as the country enjoys geographic proximity to existing natural gas grids in neighboring countries (95-km to FYR of Macedonia, 135-km to Serbia).[38] However, difficulties remain and undermine prospects. For example, IAP has failed to make any real progress and actual construction remains doubtful. In addition, the political issues between Serbia and Kosovo may continue to impact negatively on related commercial considerations. In general, the small size of the envisaged post-gasification markets in UNMIK fails to incentivize construction of the capital-intensive pipelines.

Underground Storage

There are no UGS facilities present in UNMIK currently and no plans for construction of gas reserves in the future have been made public.

Country Perspectives

Kosovo is unlikely to achieve considerable level of gasification in the next decade. Most probably it will be connected to major international projects – South Stream or Southern Corridor pipelines (TAP, IAP, SEEP, Nabucco West)

[37] **Giamouroudis, Paleoyannis (2011)**: *Security of Gas Supply in South East Europe: Potential Contribution of Planned Pipelines, LNG, and Storage,* The Oxford Institute for Energy Studies, The Oxford University

[38] Ibid.

Montenegro

General Facts: Supply, Demand, Gas Grid Development

Natural gas is not in use in Montenegro. The energy strategy of the country envisages the introduction of natural gas to the energy mix via pipeline and/or LNG imports, however Montenegrin gasification does not look realistic in the next 5 to 10 years. It is believed that in the area of Cernica, there might be oil & gas reserves worth a combined USD 27bn[39]. Gazprom is reportedly seeking production rights for the site, which if proven to be of the expected capacity, could have an impact on the gas supply and demand situation in the whole region. [40]

Involvement in International Pipeline Projects and Regional Interconnectors

Similarly to Kosovo, Montenegro has not made any solid progress towards gas interconnections, although there is potential for regional gas networking. For example, Podgorica could benefit from the planned IAP (linking Croatia with Caspian upstream producers through Greece, Albania, and Montengro) pipeline but as already mentioned above the project has made little progress so far.

Underground Storage: There are no UGS facilities present in Montenegro currently and no plans for construction of such in the future have been made public.

Country Perspectives

Montenegro is unlikely to achieve considerable level of gasification in the next decade. Most probably it will be connected to major international projects – South Stream or Southern Corridor pipelines (TAP, IAP, SEEP, Nabucco West)

[39] Ibid.
[40] Ibid.

Major Gas Pipeline Projects and Interconnectors and the Influence of TANAP

The TANAP ratification in July 2012 once again sparked discussions about the geopolitical strategy of pipeline construction choice in SEE. In short, TANAP has been framed as a particularly significant project because it is the project of choice of Turkey and Shah Deniz consortium which are ultimately to choose what will be the project that will bring Caspian gas to Europe; it gives a different spin to the Southern Corridor future and revives original Nabucco plans (through a connection to the watered down version of the project - Nabucco West).

Trans-Anatolian Gas Pipeline Project and its influence on geostrategic decisions regarding international pipelines in the region

The **Trans-Anatolian gas pipeline** (**TANAP**) is a proposed natural gas pipeline from Azerbaijan through Turkey to Europe. If constructed, it would transport gas from the second stage of the Shah Deniz gas field (Shah Deniz II). It was ratified on 12 July, 2012. The pipeline is supposed to be a 50 inch gas pipeline with overall length of approximately 2000 km and approximate capacity of 16 bcma in the beginning, expandable up to 32 bcma, originating at the Eastern and exiting at the Western border of Turkey. The State Oil Company of the Republic of Azerbaijan (SOCAR) is the main proponent of the project. The construction of TANAP sheds a different light on the question of the Southern Corridor and could become the real alternative of Russia's South Stream, thus achieving some source diversification for the SEE region. The main question remaining is which pipeline will connect to TANAP from Turkey's Western border.

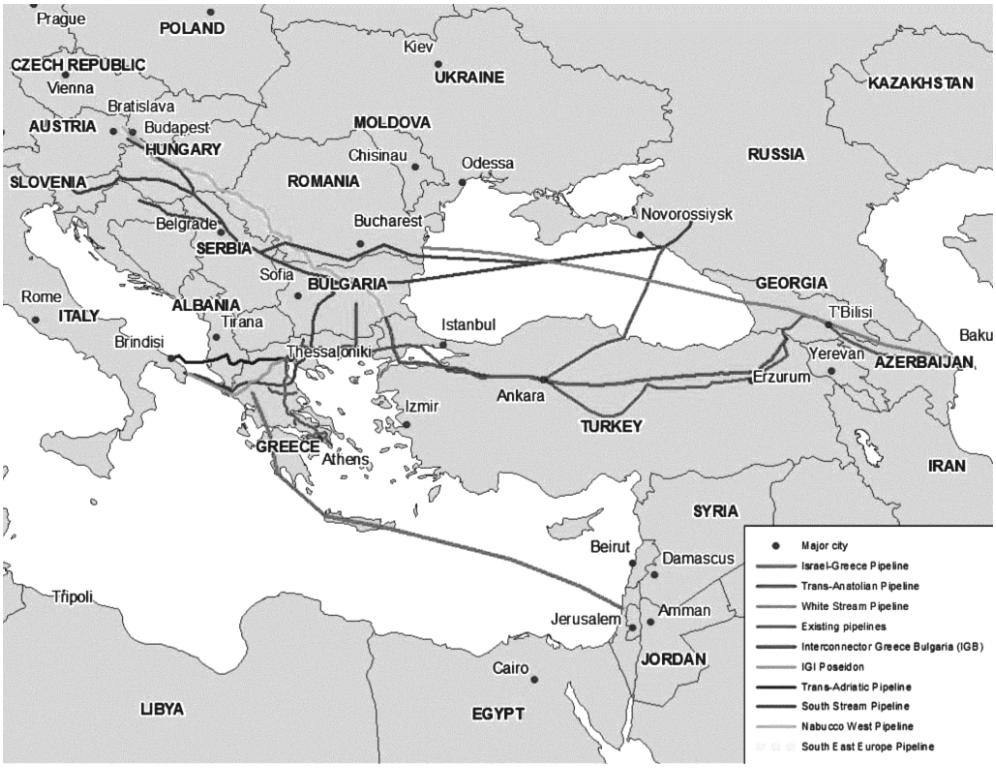
According to the Turkish Energy Minister Taner Yildiz, TANAP is a project that regenerates Nabucco, instead of destroying it.[41] On several occasions, it was announced that Nabucco West is to become a preferred partner for the distribution of gas within Central Europe. On the other hand, news reports from August 2012 show that cooperation between TAP and Shah Deniz consortium is also deepening and TAP could become the project chosen to connect to TANAP[42] Furthermore, there are opinions supporting such decision as it could be expected

[41] **UPI.com**: *TANAP pipeline to bring gas to Bulgarian border, July 5, 2012, Ankara, Turkey*

[42] **Platts**: *Shah Deniz II consortium to fund TAP, takes option on 50%, 9 August, 2012*

that TANAP partners are to prefer a smaller, more manageable partner like TAP or ITGI (Turkey-Greece-Italy gas pipeline) rather than negotiation heavy – Nabucco (West).[43] At this stage no one knows whether the winner will be Nabucco West or TAP. Both options face considerable short term challenges as the countries involved struggle to overcome the Eurozone crisis but the challenges seem more daunting for TAP than Nabucco West in 2012. The TANAP consortium is not scheduled to make up its mind on this key issue until the middle of 2013. It could be predicted that by 2020 there will be a pipeline system connecting both Azerbaijan and northern Iraq to Europe that will look pretty much like Classic Nabucco; it is just not clear whether any part of it will actually carry the Nabucco name.

Figure IV: Map of Major Regional Pipeline Projects



Source: US Energy Information Administration (EIA)

[43] **Port Turkey.com:** *TANAP, Nabucco unlikely to join forces, 6 February 2012, Ankara, Turkey*

Figure V: List of regional pipeline projects of common interest submitted to the EU [44]

Countries	Project	Project Description	Planed Date of Comple-tion	Project Promoters
Azerbaijan/ Turkey	Trans-Anatolian Gas Pipeline Project (TANAP)	New 50 inch gas pipeline with overall length of approximately 2000 km and approximate capacity of 16 bcma in the beginning, expandable up to 32 bcma, originating at the Eastern and existing at the Western border of Turkey	2016	State Oil company of the Republic of Azerbaijan (SOCAR)
Bulgaria/ Hungary/ Romania/ Austria	South East Europe Pipeline (SEEP)	42" new build pipeline system capable of transporting up to 10 bcma of SD2 gas from the Turkish-Bulgarian border through South-East Europe to the Hungarian TSO system at the Hungarian-Romanian border enabling gas sales to Bulgaria, Romania and Hungary and onwards to Baumgarten(Austria)	2015	British Petroleum
Bulgaria/ Hungary/ Italy/ Greece/ Austria/ Slovenia	EU section of South Stream	The pipeline will be constructed from the Russian Black Sea coast through 1)Bulgaria, Serbia and Hungary to Austria or 2) Bulgaria, Serbia, Hungary and Slovenia to Northern Italy and 3) through Bulgaria, Greece and the Ionic Sea to Southern Italy	na	MVM, BEH
Bulgaria/ Hungary/ Romania/ Austria	Nabucco West	Nabucco West is a modified concept of the Nabucco Project that will run from the Bulgarian/Turkish border via Bulgaria, Romania and Hungary to Austria. The pipeline is designed to transport gas initially from Azerbaijan and is fully scalable to meet future gas transport demand from Caspian Region and Middle East to the European gas markets	na	NIC
Greece/ Albania/ Italy	Trans Adriatic Pipeline	Pipeline 800 km long (in Greece 478 km, Albania 204 km, offshore 105 km, Italy 5 km). It will run from the entry	2018	EGL(42,5%), Statoil (42,5%),

[44] **European Commission:** *List of projects submitted to be considered as potential Projects of Common Interest in energy infrastructure – Gas*
http://ec.europa.eu/energy/infrastructure/consultations/doc/20120727_gas_with_marked_changes.pdf

	(TAP)	point in Komotini, Greece from Interconnector Turkey-Greece (ITG). TAP will then pass through Greece, Albania and land in Italy, in San Foca, Italy.		EON Ruhrgas (15%)
Croatia/ Montenegro/ Albania	Ionian Adriatic Pipeline (IAP)	IAP will connect the existing and the planned Croatian gas transmission system, via Montenegro and Albania with the TAP system (Trans Adriatic Pipeline) or similar. The total length of the gas pipeline from the Croatian town Split to Albanian town Fieri is 540 km	na	Plinacro
Bulgaria/ Greece	Interconnector Greece-Bulgaria (IGB)	By 2014 construction of the Interconnector Greece-Bulgaria with projected capacity of 3 bcma/y: expandable up to 5 bcm/a. Reverse mode function. Length approx.180 km (150 km in Bulgaria)	2015	ICGB AD(50% BEH EAD, 50% IGI Poseidon)
Bulgaria/ Turkey	Interconnector Turkey-Bulgaria (ITB)	The Interconnection Turkey-Bulgaria is a key project that will increase of the security of supply and the opportunity for diversification of gas supply for Bulgaria and SEE region. First phase capacity 3-5 bcma.	First phase 2014	Bulgar-transgaz EAD
Bulgaria/ Romania	Interconnector Romania-Bulgaria (IRB)	Route: Ruse-Giurgiu, reversible. Source: Caspian region and I.NG for Romania and domestically produced Romanian gas and Russian gas for BG in case of crisis. Pipeline length: 25 km (15 km Bulgarian section). Investments: EUR 27 M. Capacity: 1,5 bcm/a.	May 2013	Bulgar-transgaz EAD, Transgaz S.A.
Bulgaria/ Serbia	Interconnector Bulgaria-Serbia (IBS)	Route: Sofia- Nis, reversable. Source: Caspian region and LNG for Serbia, gas through Serbia for BG in case of crisis. Length: 150 km (55 km BG part). Pipeline capacity: 1,8 bcm/a.	2014	Ministry of Economy, Energy and Tourism of Bulgaria, Serbiyagaz
Croatia/ Bosnia/ Herzegovina	Interconnector Croatia-Bosnia & Herzegovina	Pipeline to enable the transportation system of natural gas B&H to connect with transportation system of natural gas of Croatia through the pipeline from Slavonski Brod to Donji Miholjac, and then with the Hungary pipeline.	na	Plinacro

Croatia/ Serbia	Intercon-nector Croatia-Serbia	Interconnection Croatia-Serbia agreed with Serbijagaz on the route Slobodnica-Sotin-Backo-Novo Selo (capacity of 6-7 bcm/a).	na	Plinacro
Bulgaria	Increase of the transmis-sion capacity of the existing pipeline to Greece	Expanion of the system in the following sections: CS Provadia, CS Lozenetz, Ihtiman, to Greece and FYR of Macedonia.	2015	Bulgar-transgaz EAD
Bulgaria/ Greece	Reverse flow at Sidiro-castro (BG/GR) border	Upgrades at several sites of the DESFA transmission system, among which the addition of pipeline arrangements at the existing Compressor station near Thessaloriki area and at the Border Metering Station at Sidirocastro	2014	DESFA, Bulgar-transgaz EAD
Bulgaria/ Romania	Reverse Flow at Negru-Voda	Reverse flow from BG towards RO that will be implemented with a capacity of 14 mcm/d.	2013	Bulgar-transgaz EAD, Transgaz S.A.

4. Alternative Solutions

The ability of any of the discussed SEE countries to influence major international pipeline projects is naturally limited. Hence, it is worth discussing alternative emergency solutions contributing to attaining higher levels of supply security.

The following supply security options, particularly with regard to gas markets in SEE have been outlined in the public domain[45]:

- using interruptible supply contracts (with or without alternate back-up fuels for power & industry)
- developing/adjusting LNG supply levels, or injecting supply flexibility into pipeline contracts

[45] The discussion of World Bank specified options comes from **Franz Gerner (2010)**: *The future of the natural gas market in Southeast Europe*, Washington, World Bank publications, www.worldbank.org

- maintain additional line-pack by means of constructing larger diameter pipelines for natural gas
- demand management - maximizing the seasonal dispatch of gas-fired power plants in the wider interconnected system

Most of the above options are not yet available in SEE as of 2012. Constructing LNG ports is too expensive, while rigid regulatory frameworks and the monopoly position of state-owned gas system operators have prevented the progress in the direction of interruptible supply contracts.

Availability of natural gas storage capacities contributes to increased levels of supply security, smoothing out gas consumption in moments of peak demand and/or crisis events. Gas storage is "often seen as the most suitable means of enhancing supply security against disruptions, as well as of taking advantage of profitable natural gas price fluctuations and demand seasonality."[46] However, procurement and storage of gas entails a significant cost premium and additionally, not all countries have the geological conditions to develop their own Underground Gas Storage (UGS) facilities. In the aftermath of the 2009 crisis, some SEE countries prioritized the construction and/or extension of existing UGS facilities. Prior to 2009, there was only one storage in the region – the Chiren UGS facility in Bulgaria. Subsequently, storage in Serbia was opened in the fall of 2011, while plans for the expansion of the UGS Chiren and the construction of another gas storage field in Bulgaria were made. Theoretical UGS potential within the region also exists in Albania and in Bosnia & Herzegovina.

Dual-fuel capacity in large industrial and district heating companies relate to the ability of these plants to switch to different fuel (e.g. diesel back-up) in cases of supply disruptions. This method provides for better security of supply but also guarantees production capacity flexibility and could be an easy transition to green energy heating as biomass could also be used as the back-up fuel. Furthermore, it can be implemented gradually as peak consumption rises and it generates security close to the consumers and without relying on international co-operation; finally, cost calculations identify that constructing dual-fuel capacity is more efficient and significantly cheaper (14 to 63 times) than investing in expanding gas storage facilities.[47] In SEE, it is known that in some

[46] **Giamouroudis, Paleoyannis (2011)**: *Security of Gas Supply in South East Europe: Potential Contribution of Planned Pipelines, LNG, and Storage,* The Oxford Institute for Energy Studies, The Oxford University -p.100

[47] Ibid.

countries (e.g. Bulgaria) theoretically there is a dual-fuel capacity installed in some industry and residential heating plants. Yet, the inability of Bulgarian industry and district heating systems to react to the crisis in 2009 made their practical operation quality questionable.

5. Conclusions/Policy Recommendations

Main Conclusions

- Since the gas crisis of 2009, bold action plans for strengthening the SEE gas security have been drafted; however, as of 2012, excluding limited progress regarding a few projects – little has been achieved in terms of actually solidifying security of supply situation in SEE countries
- There are strong external limitations to achieving SEE security of supply related to the limited geopolitical and geo-economic leverage of SEE countries; however, the main inefficiencies are related to wrong prioritization of national governments and opaque national decision-making marred with rent-seeking and corruption
- In terms of large international pipeline projects planned for the SEE region, it is clear that the new routes would bring the region some advantages regarding its supply, however these advantages are far from uniform:

- South Stream offers route diversification and brings additional volumes of gas to SEE but it fails to contribute to any source diversification while the lack of transparency in negotiations makes it impossible to clearly calculate the costs of the project - altogether and for the separate countries in the region
- The ratification of the TANAP pipeline project revives the Southern Corridor prospects; however, it is clear that a phased development would be needed to achieve the original Nabucco plan but it is not clear if any of the pipelines bringing Azeri gas to Europe will actually bear the Nabucco brand
- There is no real ability of SEE countries to affect decisions on large international pipeline projects but in addition to the hedging strategy most countries in the region have taken - supporting all available

options but without making actual investments, there should be a clear position on project prioritization in terms of project consortium participation and/or at least revealed policy preferences and expected benefits in each country

Policy Recommendations

- SEE governments need to prioritize **regional integration** through construction of interconnectors and/or reverse flow extensions of existing pipelines in the region
- USG construction is necessary but is not the most urgent; instead improving "switchability" by introduction of interruptible contracts to be made and equipping industry and thermal stations with effective dual-fuel capability is easier to achieve, cheaper and therefore more essential in the short run
- At least minority stake **privatization of large state-owned energy holdings** might prove viable for bringing in private investors and spurring dynamics in the industry

TANAP AND ENERGY SECURITY. HOW WILL THE CONSTRUCTION OF THE PIPELINE AFFECT GAS MARKET SECURITY IN THE BLACK SEA REGION

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Introduction

The following paper aims to analyze the implications that the construction of the Trans Anatolia Natural Gas Pipeline (TANAP) would have for the security of the energy markets present in the Black Sea region. Rather than focusing on a national approach it will consider the pipeline as distinct entity and will highlight the changes it bring to the area as a whole, but also not ignoring the state perspective, and the changes in brings to national energy sectors. For the purpose of the analysis I will first list the current situation in all relevant countries as well as weaknesses of each individual state and, in the second part, I will underline what will change with the building of TANAP and draw conclusions.

As I will point out, the pipeline will have a significant positive effect on the energy security architecture in the regional and will also help boost the whole region's profile on the gas market.

Methodology

Rather than focusing on a narrow definition I will take a broad approach and define the three possible scenarios as most likely to affect and disrupt an energy market in the Black Sea region and explain each in detail:

- A crisis (manmade or natural) that results in disruption of supplies;
- An increase of the energy product prices for a long period of time;

- Reduced investment or a sharp cut of the Foreign Direct Investment FDI - economic/ financial crisis scenario.

The crisis, which may not be an actual catastrophe and can be any natural or manmade incident that can vary from a simple closing of a pipeline for repairs to regional conflicts, military or diplomatic (a good example can be the Russian – Georgian war of 2008), is an event that can, and most likely will, affect the supply of hydrocarbons from suppliers to consumers. They usually last for a short amount of time so national strategic reserves usually are the main way to counter their effects. Even the lengthiest catastrophe is unlikely to last more than a few months so, even small source diversification can make a big difference since it helps national reserves last longer. Also, unless we are talking about huge event, which is highly unlikely and would generate all sorts of other problems, the "catastrophe" defined for the purpose of this paper is a localized event that may affect only one state or a border area, meaning that having several supply routes will diminish significantly the effect of such an event. Furthermore, because they are short lived, the chance of several such events overlapping is rather low, though this is not completely impossible. To sum up this refers strictly to a particular event that affects energy supply routes, usually one at a time and forces them to close for a determined period of time.

Secondly as a result of market conditions, high demand or low production (a limited supply of a product), or simply political pressure, the prices of fuels in general or particular type of fuel can increase significantly. This may be a worldwide event or regional one (i.e. only some suppliers may increase price) but, while it can be just as short lived as the crisis mentioned above, it can also last for a longer period of time, and therefore reserves will simply not have a significant impact. Any solution has to come be altering supply/demand. There are two possibilities: either prices increase in a certain region or at a global level.

In the first case, variation of sources is very important since it may offer access to cheaper resources that could make the price increase bearable or at least mitigate the effects of such an event and allow further diversification. Also, the infrastructure/s used to transport the cheaper resources is likely to attract most investments and develop faster, decreasing the demand for energy coming from the more expensive source(s), therefore forcing the prices back down.

In the second case (a global increase of prices) variations of sources is not that important unless it offers access to a source that offers below average prices. Still since prices are elevated at a global level this would mean the overall prices are

not sustainable and the development of states that don't have the financial capacity to deal with the situation will be affected. Variation of suppliers may mitigate somewhat the problem because it creates competition but it is not a solution.

Thirdly and lastly access to resources may be hindered by lack of infrastructure. Normally market demand will generate an expansion of the infrastructure however difficulties at the economic or financial level in a certain region or globally can hinder or, worse, bring this process to a complete halt. The reduction of investments can be either a result of a political decision or the result of diminishing resources. In the case they are a deliberate policy this may occur as a result of changing conditions (i.e. a conflict or event can scare investors) or as a result of political pressure in case a state or a number of states are opposed to a certain project. Obviously in the case of changing conditions source variation is very important since can help avoid the problem altogether. On the other hand, if there is opposition to a certain project/s having multiple options helps, but it is usually the competition that creates this kind of situation in the first place. A case by case analysis is necessary here.

In case of a financial/economic crisis that affects a whole region or the entire world variation of supply routes can help since some routes are cheaper than others and also may only require resources of the parties involved in the project, limiting the risk posed by a financial crisis and a decrease in foreign direct investment. However, overall a significant economic/financial crisis will nonetheless slow down the development of infrastructure, including energy, infrastructure in affected areas. Solutions usually require finding alternative funding sources or using national energy resources (if they exist).

It should also be noted that in the case of a crisis both diversifying suppliers and supply routes will help. On the other hand, in dealing with an increase in price variety of sources is required because routes are not that important unless they affect the price significantly while in dealing a decrease of financial resources the opposite is true and routes matter more.

This paper will analyze the implications of building the TANAP pipeline for all involved parties in case of each of the previously mentioned scenarios by comparing the likely implications of such events with and without the presence of the pipeline (i.e. before and after its construction).

Current status of the Black Sea Gas Market

For the purpose of this analysis I will limit myself to natural gas infrastructure since it is what the TANAP will carry. At the present moment in the Black Sea region there are several gas pipeline that cover the needs of the states, however before we go through them we need to identify the main supplies of natural gas and the main consumers. The gas reserves present in the soil of each country may vary but there are two net exporters, namely The Russian Federation and Azerbaijan, two transit countries, Georgia and Turkey, and four consumer countries: Ukraine, Bulgaria, Romania and The Republic of Moldova. Ukraine can be considered a transit but using existing infrastructure The Russian Federation can almost bypass it limiting its advantages as a transit country.

Now technically any transit country can either be a consumer or a produces (Georgia and Turkey are both consumers) but they stand out as transit countries due to the fact that a significant amount of gas transits the country, heading to different destinations so that they do not only buy, but also make a profit on transit fees and are less vulnerable in case a price increase. Also they usually have several alternatives in case a certain supplier or a particular route becomes unavailable for a period of time.

Of the above mentioned countries only Ukraine, The Russian Federation and the Republic of Moldova will not be will not be affected directly by the construction of TANAP, though it will most likely affect them indirectly.

I will briefly go through Ukraine and Republic of Moldova since they are not directly or indirectly involved in TANAP nor they are a major player on the natural gas market. Ukraine and Republic of Moldova are both pretty much dependent on Russian gas imports but in different percentages. While Moldova has no domestic production and relies solely on Russian imports for its gas needs (gas dependency reaches up to 100%)[1], Ukraine has used a combination of decreased consumption and increasing domestic production to reduce its import dependency to about 60% from around 75%.[2] Both countries are vulnerable in all three scenarios even if Ukraine is somewhat more prepared.

Now on the states that will be affected directly by the construction of TANAP:

[1] U.S. Energy Information Administration, Country Analysis Brief, Moldova

[2] U.S. Energy Information Administration, Country Analysis Brief, Ukraine

The Russian Federation

The Russian Federation is the biggest supplier of gas in the area and arguably in the world (holds the biggest reserves but extraction is a problem) and its exports exceeded an estimate of 175 billion cubic meters (bcm) in 2010. Still, it is less compared to previous years when it almost reached 200 bcm (2006)[3]. Since it is a major producer it's safe in case o a crisis and increase of price but its aging technology is in need of modernization/investment so it can be affected by a decrease in FDI. Nevertheless the Russian state did not seem eager to attract foreign investment since it nationalized all its major energy companies and adopted legislation that is not attractive for investors (e.g. the so called "Foreign Investments Law", No. 57-FZ/April 2008). In fact the policies adopted by the Kremlin actually helped the FDI (in Russia) plummet. Despite the decrease in production, the current leadership does not seem interested in changing its energy policy as it uses state companies to increase state power. Its main export partners are the EU (over 60%), CIS states (over 35%) and Turkey (around 14%).[4] It exports its gas resources via the following pipelines, from north to south: North Stream, Yamal-Europe, Soyuz, Brotherhood, Turkey Natural Gas Main Transmission Line and Blue Stream. Only the last two are directed towards countries in the Black Sea region that will be involved in the TANAP project.

Azerbaijan

Azerbaijan is the second main gas exporter in the region and the only serious competitor to the Russian Federation. Its exports, although significantly smaller in quantity than Russian exports (in 2010 the total gas exports were estimated at 7 bcm) are increasing and starting to receive a growing portion of the market share in the Black Sea Region (estimates put the potential exports at over 25 bcm by 2025). In fact it is the increase in its gas exports that allowed TANAP to become a feasible project. Its fast growing production means that it is safe from a crisis and high prices (it may even benefit from high prices) and, unlike The Russian Federation, the net FDI has increased between 2008 and 2010 (more friendly government policies, new discovered resources) and will likely continue to increase[5]. Its main export partners are Turkey via the South Caucasus Pipeline (Baku-T'bilisi-Erzurum) pipeline, Russia via the Gazi-Magomed-Mozdok

[3] Energy Delta Institute Website, Country Gas Profile, Russian Federation

[4] U.S. Energy Information Administration, Country Analysis Brief, Russian Federation

[5] Index Mundi, Indicators, Foreign direct investment, net, Azerbaijan

Pipeline and a small amount of natural gas is exported to Iran via the Baku-Astara Pipeline. In exchange Iran delivers gas to isolated areas of Azerbaijan[6]. The relation with Iran will likely expand, but even so it will still remain one of the minor export partners of Azerbaijan.

Turkey

Turkey is arguably the most important energy hub in the Black Sea Area. It is a major gas importer with a growing demand. Its domestic gas production only covers less 2% (currently) of its demand and its imports have increased from 30 bcm in 2006 to approximately 38 bcm in 2010[7]. The gas is imported mainly from The Russian Federation via Turkey Natural Gas Main Transmission Line and Blue Stream (almost 70% of the imports[8]), from Azerbaijan via Baku-T'bilisi-Erzurum and, again a small quantity, from Iran via the Eastern Anatolia Natural Gas Main Transmission Line. Blue stream is not used at full capacity and has a similar capacity to the Main Transmission Line so it is more of an alternative to the latter. Moreover, the existing infrastructure connecting it to Iran is not used at full capacity. Just like with Azerbaijan relations with Iran are likely to expand resulting in more imported gas from Teheran, however due to the difficult political situation in Iran and its nuclear program, it will remain a minor partner (compared to Russia and Azerbaijan). The FDI is starting to recover after a step decrease in 2008[9], but given Turkey's growing economy this does not seem to be a problem in the near future.

Georgia

Georgia is an interesting case. Since the main natural gas provider in the area is The Russian Federation and the relations between the two countries have been tense at best, it chose to receive a portion of the natural gas carried by pipelines transiting its territory instead of imposing transit fees[10] and buying the gas. As a

[6] U.S. Energy Information Administration, Country Analysis Brief, Azerbaijan

[7] Energy Delta Institute, Country Gas Profiles, Turkey

[8] Burcu Gültekin Punsmann, Şeila Abdişa, *Energy Security in Turkey* in "Energy security strategies in the Winder Black Sea Region", Iulian Chifu, Adriana Sauliuc, Bogdan Nedea (eds.), Curtea Veche, Bucureşti, 2010, pp 141

[9] Index Mundi, Indicators, Foreign direct investment, net, Turkey

[10] Tornike Sharashenidze, Bogdan Nedea, *Energy Security in Georgia* in "Energy security strategies in the Winder Black Sea Region", Iulian Chifu, Adriana Sauliuc, Bogdan Nedea (eds.), Curtea Veche, Bucureşti, 2010, pp. 299

result in 2011 (and this has probably not changed) 100% of Georgia's gas consumption was acquired this way[11]. Needles to say its internal gas production is negligible. The main pipelines that transit Georgia come either from Azerbaijan (Baku-T'bilisi-Erzurum) or Russia and head into Turkey and, respectively, Armenia. Its consumption has also been constantan in the last five years and remained constant at below 2 bcm. The demand may grow but so does the number of pipeline projects that will pass through it so it should have no problem in the near future. Theoretically it's vulnerable in case of a crisis though it is highly unlikely that both Russia and Azerbaijan will stop their exports completely and at the same time (Georgia can survive for long periods of time with the percent of gas received from any of the two). Also, gas prices and foreign investments are not issues since it receives gas instead of transit fees. Even if it's not an issue I should mention that FDI in Georgia has plummeted in 2008 after a war with The Russian Federation and a financial crisis, but it started to recover slowly[12].

Romania

Although not transit country, Romania is somewhat independent. Its domestic gas extraction covers around 85% of its consumption (that totals almost 15 bcm) and this percentage is likely to increase in the future. There are two major implications: firstly, it is somewhat safe in case of a prince increase or a decrease in FDI and almost completely protected in case of a crisis and, secondly, the amount of gas it needs to import is rather small, around 2 bcm[13]. Its main vulnerability is the fact that it imports gas from a single supplier: The Russian Federation; so disruptions in the supply can and did[14] occur, even though the implications were minimal. Its net FDI also collapsed in 2008 manly as a result of the economic crisis, but unlike Georgia or Turkey it shows no sign of recovery yet[15] indicating a possible weakness.

[11] U.S. Energy Information Administration, Country Analysis Brief, Georgia
[12]Index Mundi, Indicators, Foreign direct investment, net, Georgia
[13] Energy Delta Institute, Country Gas Profiles, Romania
[14] The Russia-Ukraine 2009 gas crisis
[15] Index Mundi, Indicators, Foreign direct investment, net, Romania

Bulgaria

Bulgaria is facing somewhat of a problem. It is completely dependent on gas imports because its domestic production covers less than 10% of production and, to make things worse it imports its imports come from a single source (The Russian Federation) via a single route (via Ukraine)[16]. This makes it one of the most vulnerable states in the region in all three scenarios. On the bright side its internal consumption is rather low compared to its neighbors (Turkey and Romania), only around 3 bcm, and therefore any new project will have a significant impact. Its net FDI followed a somewhat similar pattern to Romania; it collapsed in 2008 manly as a result of the economic crisis and shows no sign of recovery yet.[17]

TANAP Planned Capabilities and Implications

According to the protocol signed by Ilham Aliyev and Recep Tayyip Erdogan and on the 26 of June 2012 the TANAP will cost around 7 billion USD and the construction will take four years, starting from 2014 and ending in 2018. The pipeline will enter Turkey from Georgia and will split and exit the Turkish territory both at the border with Greece and at the border with Bulgaria. From there it can link up with either Nabucco West, in Bulgaria, or the Trans-Adriatic Pipeline, in Greece. Its capacity is estimates at 16 bcm initially (of which Turkey will buy 6 bcm) and will increase to 23 bcm by 2023, 31 bcm by 2026 and finally to 60 bcm in the final stage. [18]

Given the above mentioned data TANAP would initially provide roughly 1/6 to 1/7 (17%-14%) of Turkey's gas needs and can easily cover the needs of Bulgaria and Romania combined, even if most of the gas will probably head to the EU. In addition Romania and Bulgaria are much more likely to become transit countries because it makes the Nabucco West project more feasible. Last but not least, it offers Azerbaijan its first direct link with the EU gas market regardless which

[16] Marin Lessenski, Narciz Bălăşoiu, *Energy Security in Bulgaria* "Energy security strategies in the Winder Black Sea Region", Iulian Chifu, Adriana Sauliuc, Bogdan Nedea (eds.), Curtea Veche, Bucureşti, 2010, pp. 114

[17] Index Mundi, Indicators, Foreign direct investment, net, Bulgaria

[18] Vladimir Socor, *Aliyev, Erdogan Sign Inter-Governmental Agreement on Trans-Anatolia Gas Pipeline to Europe*, Eurasia Daily Monitor Volume: 9, Issue: 122, 27 June 2012

project, Nabucco West or the Trans-Adriatic Pipeline, is implemented (or they can both be implemented).

Specific implication in case o a crisis (first scenario)

In the first case, a short or medium term disruptions of supplies, the greatest advantage is gained by Sofia who is no longer almost 100% dependent on a single source and will still receive a significant part of its domestic gas consumption should the north route be disrupted (and allow national reserves to last longer). Also Turkey would gain allot since, if the predicted growth turns out to be correct, it can reduce its dependency on Russian natural gas from almost 70% to almost and potentially bellow 50% initially and almost certainly to less than 50% (40% - 45%) later, allowing it to more easily deal with a gas supply disruptions. In fact this balance (about half of its gas imports coming from The Russian Federation and the other half from Azerbaijan) will put it in a excellent position in case of supply disruption because is not too dependent on any individual source. Georgia and Romania will almost no longer be affected by such an event because the combination of low consumption and variety of sources (multiple pipelines from each gas supplier) in the case of Georgia, and the combination of high domestic production and, again, variety of sources (both Russia and Azerbaijan) in the case of Romania will mean that a disruption in the gas supply coming from a single supplier or a particular pipeline will have almost no effect.

Because it is an exporter Azerbaijan cannot be affected by a shortage caused by a supply disruption.

Specific implication in case of price increase (second scenario)

Turkey and Bulgaria once again benefit the most in this scenario and for pretty much the same reasons. Bulgaria will have an alternative that it can use as leverage during gas price negotiations (with either side) and the effects of price jump coming from one of the gas suppliers will be lessened by the presence of the other on the market. Turkey can use can use the same tools even more effectively as a result of the "balance" present in its gas imports (about half of its gas imports coming from The Russian Federation and the other half from Azerbaijan) .

Since Romania was already somewhat independent, the construction of TANAP will only help in the sense that it will allow it to switch between providers should one of them increase prices. However it will have little impact in case of a global increase of prices. Because it is an exporter Azerbaijan cannot be affected by a shortage caused by an increase in prices and it might even benefit from it. Also, Georgia will hardly be affected because it receives most of its gas resources for free instead of transit fees.

Specific implication in case o drop in FDI (third scenario)

A sudden decrease of FDI would mean less money for building infrastructure so this kind of scenario can easily also affect gas exporter. In this case Azerbaijan has allot to gain since it gains access to new markets and makes other projects significantly more feasible and cheaper, projects that will further consolidate its presence on the new markets. Also, Romania and Bulgaria will also stand to gain from the perspective of the Nabucco West pipeline project. The construction of TANAP significantly decreases the cost of Nabucco West and therefore makes it less vulnerable to fluctuations in investments. Furthermore, even if Nabucco West is not built, with relatively low costs Bulgaria can build an interconnector with Turkey and Romania can build an interconnector with Bulgaria, giving them access to Azerbaijani gas at low costs (limiting the damage done by a decrease in infrastructure investments). Nevertheless interconnectors and national infrastructure cannot fully compensate for the Nabucco West project since they can only transport a limited volume of gas.

Georgian and Turkey do not have a lot to gains in this case because their infrastructure is already somewhat sufficient. Obviously expanding it would not hurt, but it not an imperative and it will not make a major difference in case of a sudden decrease in FDI.

Conclusion

An important observation is that when Nabucco West and TANAP will be built all the countries in the Black Sea Region, with the exception of the Republic of Moldova (and excepting exporters, of course), will become transit countries which will boost the regional economic profile of the region as a whole. This is because, firstly, it will turn the entire region into a big gas exporter and, secondly, this new exporter will probably be more safe (due to the presence of

two major sources, so the gas flow will be more difficult to influence) and will likely offer better prices (mostly because of internal competition between providers). Furthermore, the competition and the lower prices are likely to attract more investors. This means that the overall security of the region will be improved (all three scenarios have been covered) and this can create the environment needed for a gas market to boom, a boom that may expand to other sectors if the conditions are right.

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DEVELOPMENT OF ALTERNATIVE ENERGY IN AZERBAIJAN

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Alternative energy such as mills utilizing water and wind, the burning of animal manure, or heating water with sunlight, has provided power since ancient times. However, the industrial revolution of the 18-19th centuries replaced traditional energy sources with fossil fuels that were more suitable for collection, transfer, and use in increasingly diverse settings. However, advances in technology over the past decades are allowing easier collection and transmission of new types of energy, making alternative energy once again viable.

The global threats posed by burning fossil fuels has revitalized the interest in energy sources that were known since ancient times – wind, solar, water, and bio energy. Unlike coal, oil, and natural gas, whose use for energy produces amounts of carbon dioxide that are creating a dangerous greenhouse effect, trapping heat within the earth's atmosphere, alternative energy is renewable, and thus much more environmentally friendly. The promotion of renewable energy enables us to save non-renewable energy sources and pass them on to future generations.

According to 2011 statistics, 260 billion US dollars have been invested to develop alternative energy worldwide. Fifty eight per cent of this amount comes from four countries– the USA, China, Germany and Italy. Globally alternative energy made up 16.7 per cent of total energy in 2011 and its share is only increasing. For instance, Germany has decided to increase the share of alternative energy to 20 percent and shut down all of the country's nuclear stations by 2020.

Interest in alternative energy is growing in Azerbaijan despite the existence of rich hydrocarbon resources. The State Agency for Alternative and Renewable Energy Sources (ABEMDA) was set up by a 16 July 2009 Presidential decree and is responsible for drafting the state alternative energy strategy for 2012 – 2020 (based on Presidential decree--29 December 2011). In 2012, another Presidential decree turned the State Agency into a State Company (State Company AREA).

In 2011, Azerbaijan's electric stations produced 6200 MV of power. The highest level of demand, occurring in the winter months, only reached 3800 MV, or just 69 per cent of existing power. In other words, Azerbaijan has a reserve electrical capacity of 31 per cent, or well over the established international standard of 25 percent.

Alternative energy makes up 10 percent of Azerbaijan's energy production; 9.7 percent of which come from hydro-power stations and 0.3 per cent from other sources including small water and wind power stations. The Azerbaijani State Company for Renewable and Alternative Energy (State Company AREA) has set 20 percent of overall electric energy production coming from alternative sources as its 2020 goal.

AREA has set up 21 observation stations across the country to study the production possibility of alternative and renewable energy sources. These stations will help to identify capacities of wind, solar power, thermal sources, and small hydro-power stations. In addition, well-developed cattle-breeding in Azerbaijan creates favourable opportunities for the development of bio-mass.

Water energy

The potential of hydro-energy in Azerbaijan is estimated at 40 billion kWh and five billion kWh out of this could be produced by small hydro-power stations. Although it is cheaper to produce one kW of energy in large hydro-power stations, bigger hydro-power stations require greater investment and create a more negative environmental impact. There are therefore possibilities in the construction of small hydro-power stations and a drafted program has raised interest at the Asian and Islamic Development banks, Germany's KfW Development Bank, and a number of other international financial institutions.

Azerbaijan's hydro power potential of 40 billion kWh is twice as big as the amount of electric energy presently produced in the country. However, the realization of such potential is not easy. Hydro-electric power stations require huge investment and are more expensive than Thermal Power Plants (TPP). The production of 1 kW of energy at a medium-sized hydro-power plant is estimated at $1500 or higher. The energy produced at thermal stations costs just over half as much. Such significant price differences are due to more complex and expensive hydro-technical facilities required for hydropower stations.

Despite the availability of huge oil and gas reserves, the country's leadership intends to intensify the construction of small (1-8 MW) and medium (20-50 MW) hydro-power stations, as well as to modernize the existing stations.

Azerenerji, the Ministry of Industry and Energy, and the State Company AREA plan to build 61 small hydropower stations on rivers, irrigation channels and water reservoirs in the coming decade. Annual power output from these plants is estimated to be 3200 MWh. The State Company AREA and UN Development Programme are implementing a technical assistance project to develop the hydro-power energy in Azerbaijan. Shaki's Dayirmanarxi river was chosen as the first pilot project, while Azerenerji is constructing a number of small hydro-power stations in Fuzuli, Ismayilli, and other districts.

Solar

According to the Ministry of Ecology and Natural Resources, Azerbaijan has great solar power potential. There is an average of 260-280 sunny days per year in Azerbaijan, 2400-3200 sunny hours , and a potential 1500-2100 kWh of power per square feet. If fully used this could help to save 20 per cent of electric energy (according to the State Company AREA) that is currently used. The Absheron peninsula, coastal territories of the Caspian Sea and the Autonomous Republic of Nakhchivan are especially promising locations for solar power production.

Wind

Considering the environment, economic infrastructure, and geographical location, wind power potential in Azerbaijan is estimated at 800 MW or about 2.4 billion kWh. Wind power could potentially replace about 0.8 million tons of conditional fuel. The Absheron peninsula is considered to be the best place to develop wind power due to average annual wind speed of 5-8m/seconds and 245-280 windy days per year.

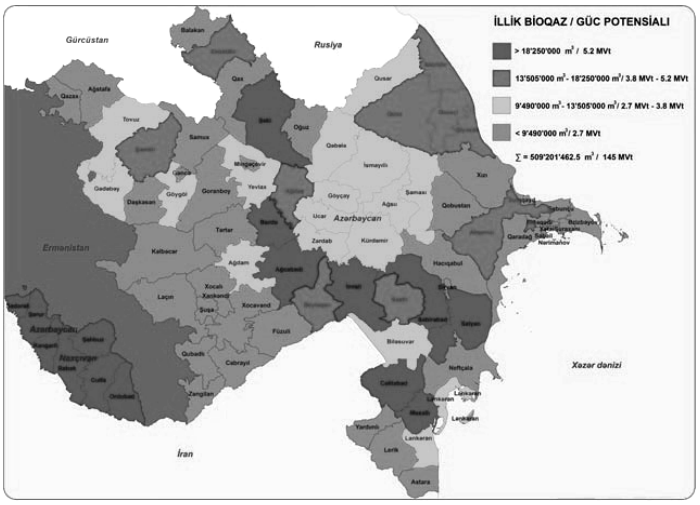
Mapping the country's potential wind resources is an important first step, and the stations set up by State Company AREA will provide more accurate information.

Photo: The State Company AREA introduces the Gobustan demonstration site for Alternative Energy to foreign organizations, state agencies and representatives of scientific circles

Biomass

There is a great potential in Azerbaijan to use biomass as source of energy. Methane produced from animal manure could amount to about 40-45 million cubic meters. Sixty percent of animals are kept by village farmers and given biogas facilities, farmers could produce 25-27 million cubic meters of gas annually. The map below shows the biomass potential of Azerbaijan's regions (AREA info).

Map: Bio-energy potential of Azerbaijani districts



In addition, there are more than 200 household waste dumps in Azerbaijan covering a total area of more than 900 ha. Average waste per person in Azerbaijan is between 0.5-0.6 kg/per day , meaning that about two million tons of waste accumulates across the country every year. Thus, utilizing simple human waste creates the potential for 15 million cubic meters of methane annually from Baku and 2-3 million cubic meters from each Ganja and Sumqait.

Geothermal energy

Azerbaijan's potential for the production of geothermal energy may reach 400 thousand cubic meters per day. The temperature of thermal waters must be between 35^0C and 100^0C, but according to AREA, geothermal energy can be produced in the area of Greater Caucasus, Absheron peninsula, Caspian coast of Quba, Kur-Araz plain, Smaller Caucasus, Talish-Lankaran, Calilabad, Shamaxi-Qobustan zones, Acinohur-Kur-Iori river and the Autonomous Republic of Nakhchivan.

Tide and wave energy

Although no research has been conducted, it is likely that like in Canada and Norway, the tide of the Caspian Sea can be used as source of alternative energy.

Energy efficiency

In addition to investing in alternative energy sources, more efficient use of energy can also become a very significant type of "alternative" energy. There are technical, economic and financial aspects in the fight against energy loss. For instance, in the years following independence the use of energy was based on "agreements" between consumers and payment collectors rather than on indicators of actual energy use measured with electric and gas meters. Strict policies applied by the state over the last couple of years has helped regulate payments and save 20-30 percent of energy.

Another important energy saving measure is the use of modern thermal insulation in homes. The use of modern insulation and higher quality door and windows could possibly save 30-50 percent on the heating and cooling.

Furthermore, better practices in oil production would collect the gas (usually methane) by-product of oil production rather than allowing it to be released into the air and burnt. Such steps would protect the environment and save valuable fuel.

Finally, improvement in the efficiency of thermal power will open up another alternative energy source for Azerbaijan. Until recently the amount of energy necessary to produce 1 kW of energy from a thermal electric station was much higher than the world average and despite recent work on a number of Azerbaijani thermal electric plants, there is still much to be done.

In general, possibly because of Azerbaijan's rich natural fossil fuel resources, energy efficiency has not received sufficient attention. However, we have to bear in mind that oil and gas also belong to future generations and we bear responsibility for securing this "treasure" into the future.

Technical, Economic and Social Realities of Alternative Energy in Azerbaijan

Azerbaijan has rich alternative energy potential but realization of this potential depends on a number of technical, economic, and social factors. At present, consumers in Azerbaijan pay 6 qapiks (qapik = 0,01 AZN) for 1 kW electric energy and 10 qapiks per 1 cubic meters of natural gas. Hydro-power producers receive 2.5 qapiks per kW while thermal electric energy producers receive 4.5 qapiks per kW released to the electric grid.

Estimates show that increasing taxes on presently produced fossil fuels could make the production of alternative energy cost effective. Consumers would have to pay about 12-13 qapiks for biomass, 20-25 qapiks for wind power, and more than 50 qapiks for solar power. However, the increase of taxes directly depend on the purchasing power of consumers. Even though the poverty level in Azerbaijan has been reduced from 44.7 per cent to 7.6 per cent between 2003 and 2012, electric and gas energy bills still constitute the bulk of expenses for many families. It is hard to imagine energy prices being raised to such levels under the current living conditions and even though the development of renewable energy is a strategic priority for the government, the economic, organizational, regulatory, and tax environment is not sufficiently encouraging for private investments.

In order to continue developing alternative energy we need to analyze the links between energy and other sectors, fit the alternative energy strategy with the

country's general development model and national priorities. All country interests should be mutually regulated. In addition, because Azerbaijan's share in global green-house gas emission is small, less than 0.5 per cent, Azerbaijan should carefully review its own priorities and pursue its interest without any rush.

Photo: Seminar on the development of alternative energy attended by the State Company AREA, UN Development Programme, the Council of Europe and Norwegian embassy, 1 April 2011.

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Green economy

The idea of a green economy, one that considers ecological risk and scarcity of resources, and works to ensure both higher standards of living and social equity, has gained traction over the last couple of years not only in Azerbaijan, but also around the world. The major point of differentiation between the concept of a green economy and our current economic system is the full consideration of the actual value of resources, including externalities. For example, a green economy takes into account the value of air, water, and other renewable and non-renewable biological resources coming from nature. Today, when oil and gas are extracted only their geological, extraction, and exploitation costs are considered. However, within a green economy, the cost of fossil fuels would also include their "existence" value, the cost incurred of not preserving resources for future

generations. If the full value of natural resources would be taken into account, many goods that are now considered cheap would be much more expensive.

A green economic model would ensure a more harmonic and social development. Socially, accounting for the full costs of resources would be important because by using advanced technical means the rich "have privatized" and exploit resources that belong to everyone, but are "inaccessible" for the poor.

Finally, alternative energy has a great potential to help save oil and gas resources in Azerbaijan. Azerbaijan's total electric power consumption equals 20 billion kWh. If at least 250 grams of conditional (oil and liquid gas) fuel is needed for the production of one kWh of electric power, each percent of electric power produced from alternative energy sources can save up to 50 thousand tons of oil or liquid gas. The current production of alternative energy, mainly from hydro-power stations, constitutes 10 percent of total electric production and helps save 500 thousand tons of conditional fuel per year. If the figure reaches 20 per cent like in Germany, 1 million tons of conditional fuel would be saved each year.

Alternative energy has become a global focus over the last decade and UN General Secretary Ban Ki-moon announced that 2012 would be the year of "Sustainable Energy for Everyone" in a speech delivered at the "Future World Energy Summit" held in Abu Dhabi on 18 January 2012. In this speech, he called on nations of the world to double energy efficiency and the share of sustainable energy by 2030.

CHAPTER 6

Hydrocarbon transit revenue transparency in Georgia, Bulgaria, Turkey and Ukraine

THE LEVEL OF TRANSPARENCY OF OIL AND GAS TRANSIT OPERATIONS THROUGH BULGARIA, GEORGIA, TURKEY AND UKRAINE[1]

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1. EXECUTIVE SUMMARY

Report overview

This report is the result of the "Promoting Hydrocarbon Transit Transparency in Bulgaria, Georgia, Turkey and Ukraine" research project undertaken under the auspices of the Open Society Georgia Foundation[2] across these four participating countries.

The major objective of the project was to effectuate transparency in the hydrocarbon transit sector in these countries of the east-west energy corridor. To achieve this important objective, the project team performed a country-by-country research of transit operations and examined their degree of transparency in the context of state revenue generation. The present report presents conclusive results of these project activities.

This executive summary is followed by country chapters with a concise overview of the hydrocarbon energy sectors of Bulgaria, Georgia, Turkey and Ukraine. The country chapters attempt to highlight challenges that exist in the oil and gas transport industries and to disclose the difficulties that exist in getting public

[1] This Report is prepared with financial support from Revenue Watch Institute and Open Society Georgia Foundation (OSGF) within a framework of the OSGF in-house project *"Promoting Hydrocarbon Transit Transparency in Bulgaria, Georgia, Turkey and Ukraine"*. The views expressed in this publication do not necessarily reflect the views of Open Society Georgia Foundation and Revenue Watch Institute

[2] Open Society Georgia Foundation (www.osgf.ge) was founded in 1994 and is a member of the Open Society Foundations network.

information on transited volumes of oil and gas, state budget revenues, and tariffs for the transit of oil and gas in those countries.

The lack of transparency of revenue schemes relevant to transit arrangements and the unavailability of reliable data and basic communication obstructions with key actors are the biggest problematic areas. The report sets forth generalized policy recommendations based on these preliminary findings, with suggestions for further actions.

The research is well-aligned to the general scope of the Extractive Industries Transparency Initiative[3] (EITI). However, the EITI focus in this report has been slightly altered from transparency in extractive industries to transit industries. The principles of EITI - the engagement of civil society in the oversight of management and deployment of revenues for the benefit of effective economic and social development – have not changed in the EITI transit initiative.

Report methodology

The key players in the energy transit industry, together with the relevant state authorities, were targeted for data collection.

The research process started in May 2011 and lasted through December 2011. Project activities across Bulgaria, Georgia, Turkey and Ukraine were carried out through the coordinated and synchronized efforts of country experts. The methodology approach was similar across all four countries. The key players in the energy transit industry, together with the relevant state authorities, were identified and targeted for data collection. Information the project team solicited comprised of both oil and gas transit arrangements.

In particular, each country expert sent information request letters to the relevant stakeholders (private companies and state authorities) asking them to provide the following information:

a) Precise declared annual **volumes** of transited oil and gas for calendar years 2008, 2009, 2010;

b) **Tariff** values, as levied factually for transit of oil and gas for 2008, 2009, 2010;

[3] www.eiti.org

c) Declared values of **budget revenue** receipts by relevant state authorities for 2008, 2009, 2010;

d) Declared values of **budget payments** by companies involved in transit operation for 2008, 2009, 2010.

Such requests were addressed in writing, while country teams tried to gather the same information online through relevant websites, available public reports and various official sources of public domain.

This methodology was used in order to assess whether the information on transited oil and gas volumes, tariffs, revenues and payments were available to the public in Bulgaria, Georgia, Turkey and Ukraine.

Major findings and recommendations

A lack of publicly available information on hydrocarbon transit was apparent across all four countries from the very beginning.

Written requests were left unanswered, while in certain cases responses were incomplete and ineffectual to the request. The few clarifications the project team received were sometimes inadequate, or lacked the level of disaggregation necessary for the needs of the project.

Relevant government and private company websites either did not possess the desired information or the published data was simply inadequate for the research needs. There were no cases when the project team was able to obtain the requested data from two different sources, making data verification impossible.

Transparent public reporting by governments on their petroleum revenues and by companies on their payments to governments will contribute to economic growth and prudent use of these revenues.

The ultimate recommendation of this report is that all project country governments and companies involved in transit operations make oil and gas transit related data available to the public.

EITI Transit initiative - a tool for more transparency in oil and gas transit industry

The project team suggests that country governments and private companies operating in oil and gas transit industries in Bulgaria, Georgia, Ukraine and Turkey implement unified reporting requirements – such as EITI Transit -

whereby Governments and private and state-owned companies that are engaged in hydrocarbon transit would be obligated to produce a standardized form report that would include financial data pertinent to hydrocarbon transit operation, i.e.:

- tariff structure
- volumes of transited oil/gas
- revenues of the state budget from transit operations and
- payments to the levying authorities.

Increased public support, improved investment and business climate

The basic principles of EITI can be transformed into EITI Transit unaltered. Once a host government chooses to endorse this initiative, then all budget revenue streams from territorial oil and gas transit will be disclosed to the public. Receipts to the budget will be reconciled with declared payments from energy companies by independent third party auditors, with active engagement of civil society, thereby enhancing wider accountability and transparency in the country. Negligible administrative costs and resource burdens are easily outweighed by the value of increased public support, improved investment and general business climate.

The country overview sections of this report provide more specific indications of what these challenges are and illustrate the important role of transparency mechanisms that should be in place when it comes to hydrocarbon transit.

2 COUNTRY CHAPTERS

2.1 BULGARIA

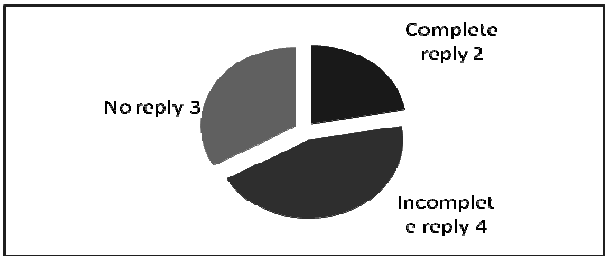
Country Summary

Bulgaria's membership in a number of international bodies and obligations has not been sufficient to address transparency concerns over gas transit information. While general access to information is guaranteed by the law, the access to gas-transit-related information was effectively limited by two-way contracts between Russian Gazprom and its Bulgarian counterpart. Terms of the contracts between Russia-Bulgaria are not publicly disclosed.

Project team could not get the information on gas transit tariffs, state budget revenues from transit and company payments.

Most of the information on volumes of natural gas transited through Bulgaria can be obtained either online (on company websites), or by a formal request to the government. However, there is no publicly available information on transit tariffs, revenues and payments. Information on transit tariffs is classified, as per confidentiality clauses of gas transit contracts between Russia and Bulgaria. Furthermore, neither government, nor private companies, could provide the requested information on revenues and payments from gas transit to the state budget. While Bulgaria's transit operator, Bulgartransgaz's audited reports are available online and detail company revenues from the transit of gas, it is not possible to discern the exact amount of revenues that went to the state budget.

Analysis of the requested information on Hydrocarbon Transit from Governmental Agencies and Private Companies



Overview of the hydrocarbon transit sector

The Bulgarian energy sector is comparably small in global terms, but is rather sizable in the country's industrial portfolio. It is considered strategic for the country's economy and national security. Although the private sector's share in Bulgarian energy has been increasing steadily, the larger share is still controlled by the state. Transparency remains a major governance issue for the energy sector in Bulgaria.[4] The import and transit of hydrocarbons is a specific concern as the country is almost entirely dependent on a single source - Bulgaria imports nearly all of its gas through a single pipeline from Russia. Gazprom (through its intermediaries) is the single supplier of gas for import and transit for Bulgaria.

[4] Center for the Study of Democracy (CSD) 2010: "The Energy Sector in Bulgaria: Major Governance Issues." www.csd.bg/artShow.php?id=15199

The import and transit pipeline systems are physically separated. The transit system has so far been reserved for Gazprom gas only and is not connected to national gas transmission pipelines. Under existing contracts, Bulgaria is obliged to transit up to 17 bcm annually to Turkey, Greece and Macedonia. This is more than six times higher than the entire internal demand for 2010.

The gas transmission system of Bulgaria is owned and operated by Bulgartransgaz EAD[5] and is comprised of: (1) a gas transmission network for supplying internal consumption, including gas pipelines with high-pressure branches (1,700 km); three compressor stations (total capacity 49 MW); 68 gas pressure-reduction stations; and eight gas measuring stations; (2) A gas transmission network for natural gas transit, including transit pipelines (945 km) and six compressor stations (total capacity 214 MW); (3) The "Chiren" underground gas storage facility and one compressor station (total capacity 10 MW).

Currently, natural gas is transited by Bulgartransgaz EAD through Bulgaria to Turkey, Greece, and Macedonia. By decision of the Bulgarian government, transit fees are retained by Bulgartransgaz EAD, although transit contracts are negotiated between Gazpromexport, Russia and Bulgargaz EAD, Bulgaria. In December 2006, a memorandum between Gazprom and Bulgargaz EAD (the sole public supplier license-holder) extended the span of natural gas transit contract from Russia, through Bulgaria, and on to third countries until 2030. The contract "booked" volumes of 17.8 bcm per annum with an option for an additional 5 bcm per annum[6]. Both Bulgargaz EAD and Bulgartransgaz EAD are subsidiaries of Bulgarian Energy Holding EAD (BEH)[7], which is a 100% state-owned shareholding company that also incorporates all of the remaining state-owned companies in the energy sector.

Officially, the tariffs for gas transit through Bulgaria remain confidential, although the text of the memorandum between Gazprom export and Bulgargaz regarding gas transit contracts have been leaked from unofficial sources. However, data on taxes and fees from the transit of natural gas could not be discerned from the taxes and fees from all other licensed activities of Bulgartransgaz. While the audited reports of Bulgartransgaz detailing company revenues from the transit of gas are available online, it is not possible to discern

[5] The company also owns over 2,500 km of cable network and 651 km of optical cables.

[6] www.gazpromexport.ru/en/partners/bulgaria

[7] www.bgenh.bg/en/index.php

the exact amount of revenues that went to the state budget. Revenues from the transit of gas go directly to Bulgartransgaz which pays a 10% income tax to the state budget, after expenses. The remainder of the money goes to Bulgarian Energy Holding (BEH), which pays dividends and VAT on other revenue to the state budget. This way, the financial streams solely from gas transit cannot be separated from other BEH revenues. In this way, an exact estimation of state revenues from gas transit only cannot be done. Consequently, while the audited financial reports of Bulgargaz and Bulgartransgaz are publicly available online, simple calculations, such as the revenues from gas transit to the state's consolidated budgets, cannot be deduced. Moreover, oversight of gas transit from the European Commission proved to be limited, as it does not possess any official data on revenues.

Access to information regulations

Access to information is guaranteed by the law, via the Bulgarian Access to Public Information Act (APIA), which was adopted in 2000. Its latest amendment, from 2008, promotes the "proactive publication of information online."[8] In accordance to the Act, public access to information is denied in cases when the requested information is classified or represents a trade secret, as its release would lead to unfair competition.[9] In the latter case, the interests of a third party are affected, thus requiring the third party's "explicit written consent for the disclosure of the requested public information, unless there is overriding public interest."[10] In the case of refusal of access to information, legal and factual grounds must be provided. Moreover, a refusal of access to information on the grounds of unfair competition necessitates a description of the exact circumstances, which would lead to such unfair competition among business persons.[11]

The Bulgarian Statistics Act also pertains to the disclosure of information. Article 25 of the Act prohibits the disclosure of "individual data" stipulating that "statistical authorities may not disclose or provide individual statistical data … [or] data which can be matched in a way that enables the identification of a

[8] Published in the Official Gazette, Issue # 104, of December 5, 2008.
[9] APIA, Article 37(1), www.aip-bg.org/library/laws/apia.htm
[10] APIA, Section III, Article 37(1).
[11] APIA , Section II, Article 17(3).

specific statistical unit."[12] The latter was the most cited reason for non-disclosure of gas transit information (and more specifically, transit revenues).[13]

Analysis of the information availability on hydrocarbon transit

As envisaged in the project methodology, information sought was standard to all countries and related to the volumes of transited gas, transit tariffs, and the revenues to the consolidated state budget and payments during each of the following three years: 2008, 2009, and 2010. In order to assess the availability of gas transit information in Bulgaria, a handful of tools were used. First, information was sought on the websites of all relevant government agencies and private companies.

The following websites have been explored:

a) Ministry of Finance www.minfin.bg - contains no information on volumes, tariffs and revenues;

b) Ministry of Economy, Energy and Tourism www.mee.government.bg - contains no information on volumes, tariffs and revenues;

c) Bulgarian Energy Holding www.bgenh.bg - contains no information on volumes, tariffs and revenues;

d) Gazprom www.gazpromexport.ru - contains no information on volumes, tariffs and revenues;

e) National Statistical Institute www.nsi.bg - contains no information on volumes, tariffs and revenues;

f) Bulgartransgaz www.bulgartransgaz.bg - Includes information only on volumes (as well as capacities, audited financial reports which were not relevant to research purposes);

g) Bulgartransgaz www.bulgargaz.bg -Includes information only on volumes (as well as tariffs but only for gas for internal consumption and not transit);

[12] Statistics Act, Article 25(1) and (2), www.nsi.bg/img/uplf_e/StatisticsAct_en.pdf

[13] E.g., in the course of the current project, both the National Statistical Institute and the Ministry of Finance cited the Statistics Act as a reason for non-disclosure.

h) State Energy and Water Regulatory Commission www.dker.bg - contains no information on volumes, tariffs and revenues.

In cases when the required information was not publicly available online, official requests for information were sent to the respective organizations, followed by a phone call to establish their receipt. Organizations contacted include:

a) Ministry of Economy, Energy and Tourism- replied adequately;

b) Ministry of Finance- no specific answers, called to explain they do not have these data;

c) Bulgarian Energy Holding (BEH) - no reply;

d) State Energy and Water Regulatory Commission (SEWRC) - no reply;

e) National Statistical Institute (NSI)-no specific answers, as per confidentiality concerns;

f) Bulgargaz - no specific answers, referred us to Bulgartransgaz;

g) Bulgartransgaz - no specific answers;

h) Gazprom- no reply;

i) DG Energy-replied adequately.

In addition, DG Energy was contacted in an attempt to assess the current level of gas transit information disclosure to the EU.

The bulk of the requested information on gas transit through the country (i.e. tariffs, taxes, fees, and revenues, payments) is not publicly available online. This holds true for both government and private companies' websites. The tariffs for transmission, distribution and storage[14], however, are regularly published online.[15] The decision of the Bulgarian government to leave the transit fee with Bulgartransgaz EAD discourages transparency in gas transit revenues. It prevents the state authorities and the taxpayers from controlling what part of the payments go to the company for transportation of the gas and what to the state

[14] A draft contract for gas storage, including the technical specifications of the gas stored and a sample scheme for calculating the price for stored gas is available, www.bulgartransgaz.bg/UserFiles/File/Dog_sahranenie.pdf. In addition, there is a database of public procurement procedures dating back to 2008, and information on licenses owned and compliance procedures followed.

[15] In line with price updates that according to delivery contracts should occur every three months, www.bulgartransgaz.bg/UserFiles/File/data/price_bg.pdf

for using its territory for transit. It reduces independent oversight over gas transit revenues and blurs the performance efficiency of the transiting company.

The data collected in this research does not distinguish taxes and fees from the transit of natural gas from the taxes and fees from all other licensed activities of Bulgartransgaz. Gas transit revenues (published online in audited reports) go to Bulgartransgaz, which then, after excluding its expenses from its revenues, pays 10% income tax to the state budget. The rest of the money goes to BEH, which pays dividends and VAT to the state budget (for gas transit together with other revenues). This way, the financial streams from gas transit alone cannot be separated from other BEH revenues. Consequently, simple calculations, such as the revenues from gas transit to the state's budgets, cannot be deduced.

The release of information on transit volumes presents an interesting case. It seems that most of the information on volumes of natural gas transited through Bulgaria (data on technical, contracted, and available capacity at cross-border entry and exit points) has been made public, yet, SEWRC's Decision No P-118 dated 18.08.2010 approved the limited publication of data for certain key gas entry and exit points. SEWRC's decision followed a request by Bulgartransgaz to limit public information for the transit system entry point Nergu Voda 2&3 and the three exit points on the grounds that such information is a breach of trade secrets and would present an obstacle in the creation of a competitive internal gas market. SEWRC based its decision on Article 6 (par. 3&5) of Regulation (EC) №1775/2005[16] and confidentiality clauses in contracts between Gazprom export and Bulgargaz. As a result, and in line with Regulation (EC) №1775/2005, currently available online information includes the capacity used at entry point NerguVoda 2&3 in 2008-2010 (the gas transit pipeline) and the available capacity for 2011, but not the technical and contracted capacity. Similarly, data on used and available capacity is also available for the three cross-border exit points; however, technical and contracted capacity information is limited for two out of the three exit points.[17] Thus, while following EC's requirements on publicizing the available capacity, this information remains inaccessible to third parties, likely due to the existing contractual obligations between Gazprom and Bulgargaz.

[16] The non-disclosure of information is based on the fact that transit capacity is currently contracted to less than three companies

[17] www.bulgartransgaz.bg/index.php?page=13&sid=29

While transit volumes were available online on companies' websites, the government provided this information by a formal request only. Formal requests for information were sent to all relevant stakeholders (i.e. ministries, state-owned and private companies, and other government structures, as outlined in the methodology section above). Out of nine formal requests for information sent to government and private organizations, six resulted in a formal response. The Tables below summarize the information available to the public and indicate the data source (i.e. via the web or a formal written request). As shown, current data on transit volumes is publicly accessible, either online, or through a formal request, while data on transit tariffs, revenues, taxes and fees are not publicly available using either means. Neither the government nor private organizations were able to provide the requested information on revenues from gas transit to the state budget. A commonly cited reason for non-disclosure of the requested information was the Statistics Act, which does not permit the disclosure of separate company's data[18]. A suspicion responsibilities were being passed was also evident, as the ministries rerouted data requests to BEH and Bulgartransgaz, who in turn, advised that these inquiries should be addressed to the ministries.

Table I. *Gas transit information from Government* **(Incl. state-owned companies)**

Benefit Streams	2008	2009	2010	Source of information*
Volumes				
Total volume of gas transit* (mcm)	16,682	12,313	12,169	Official letter
Transit Tariff				
Gas transit tariff	n.a	n.a	n.a	none
Transit Revenues				
Total revenues from gas transit	n.a	n.a	n.a	none

Notes: *Data on volumes are in million cubic meters (mcm); data on revenues are in local currency (BGN).*

** Internet or Formal Request for Information (FoI); none - if information is not available through any of these two sources.*

[18] Both the Ministry of Finance and the NSI cited the Act as a reason for non-disclosure.

Table II. Gas transit information from Private Companies

Benefit Streams	2008	2009	2010	Source of information*
Volumes				
Total volume of gas transit* (mcm)	16,682	12,313	12,169	Internet
Transit Tariff				
Gas transit tariff	n.a	n.a	n.a	none
Transit Payments				
Total payments for gas transit	n.a	n.a	n.a	none

Notes: *Data on volumes are in million cubic meters (mcm); data on revenues are in local currency (BGN).*

** Internet or Formal Request for Information (FoI); none - if information is not available through any of these two sources.*

2.2. GEORGIA

Neither state agencies nor private companies responded to any inquiries. The only response project team received was from BP which contained information on transit tariffs, volumes and payments for all BP operated pipelines.

Country Summary

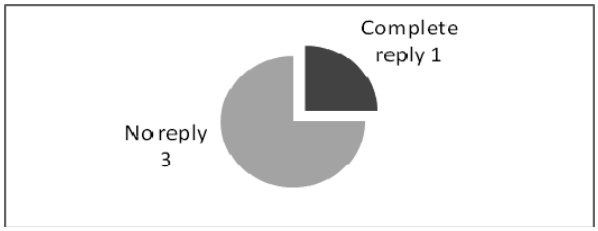
Georgia is quickly rediscovering its "Silk Road" heritage as gas and oil from the Caspian basin flow across its territory. The Georgian government's Eurasia corridor policy required substantial investment, most of which was allocated by international oil and gas leaders. Currently key transit pipelines across Georgia (BTC and WREP for oil and SCP for gas) are operated by British Petroleum (BP). BP and its partners have invested more than $5 billion over the last 10 years while State benefits from transit arrangements are in excess of $50 million a year.

Despite a significant engagement of the non-governmental sector in energy related activities, information regarding the proceeds of such transit

arrangements is still unavailable to the general public. The requested information on volumes, tariffs, budget revenues and payments from oil and gas transit was not available.

Neither the state agencies nor private companies responded to any inquiries. The only official response the project team received was from BP. The letter included information on transit tariffs, volumes and payments for all BP operated pipelines (2008, 2009, and 2010). However neither BP, nor Statoil had any public data in the public domain pertaining to their payments to the government of Georgia for conducting transit activities in the country. The published financial statements were in full compliance with western practices and business standards, however, they lacked the disaggregate listing of financial contributions to the State for the revenue generating operation and services.

Analysis of the requested information on Hydrocarbon Transit from Governmental Agencies and Private Companies



Overview of the hydrocarbon transit sector

Georgia is well-located between the largest producer and consumer states of the region. By allowing international transit of hydrocarbons from Russia to the south and from the Caspian region to the west to Europe, it effectively forms a bridge between the source countries and markets and ensures energy security through diversification of supply sources and routes; considerations that have gained increased significance in Europe today. Energy projects play a decisive role in Georgia's strategic calculations. The development of the East-West energy corridor has been perceived as the foundation of serious foreign investment in Georgia's economy. Apart from the economic benefits, pipeline politics are expected to change the whole security of the environment in the region. This chapter will focus on Georgia's pipeline transit only and the availability of information related to it.

The territory of Georgia is now crisscrossed with a network of hydrocarbon transportation networks: the Baku-Supsa Oil Pipeline, Baku-Tbilisi-Ceyhan Oil Pipeline, North-South and Baku-Tbilisi-Erzurum Gas Pipelines.

The Baku-Tbilisi-Ceyhan Oil Pipeline is owned by the BTC Consortium and operated by BP.[19] On behalf of the consortium, the operating company pays a minimal tax return into the state budget, which corresponds to certain per barrel amount of the crude volumes in transit. The pipeline has a projected lifespan of 40 years and is capable of transporting up to 1.2 million barrels of oil per day. For the lifetime of the project, some moderate transit fees are expected to accrue to Georgia and substantial transit fees to Turkey. For Georgia, transit fees are expected to produce an average of US$ 60 million per year.

The West Route Export Pipeline (WREP), otherwise known as Baku-Supsa Early Oil Pipeline, is the first BP-led project in Georgia and has been successfully and safely operating since 1999. The owner of the pipeline is Georgian Oil and Gas Corporation[20] (GOGC) and is operated by BP on behalf of the Azerbaijan International Oil Consortium[21] (AIOC), based on a long term lease agreement. The AIOC pays the rent in lieu of tariff per barrel amount on the transported crude and assumes full operation liability (technical maintenance, upgrade and construction of facilities) of the pipeline on the territory of Georgia. The Georgian government is the sole shareholder of GOGC at the moment and is capable of extracting the WREP transit revenue from the company in the form of a shareholder dividend. The capacity of the pipeline is 140,000 barrels per day (bbl/d) with an upgrade potential of up to 220,000 bbl/d.

[19] Consortium shareholders are: BP (30.1%); AzBTC (25.00%); Chevron (8.90%); Statoil (8.71%); TPAO (6.53%); ENI (5.00%); Total (5.00%), Itochu (3.40%); INPEX (2.50%), ConocoPhillips (2.50%) and Hess (2.36%).

[20] The Georgian Oil & Gas Corporation (GOGC) is a 100% state owned Joint Stock Company that runs the high pressure gas pipeline system of Georgia with the total length of 1940 km. GOGC is responsible for the main natural gas supply network of the country, security of gas supply and diversification of such supply routes. GOGC represents the Government of Georgia in all Caspian oil and gas transportation projects passing through the territory of Georgia.

[21] Azerbaijan International Oil Consortium (AIOC) represents the Azeri Chirag Guneshli field owner consortium with the following shareholder distribution: ACG participating interests are: BP (operator – 37.4%), Chevron (11.3%), SOCAR (10%), INPEX (11%), Statoil (8.6%), ExxonMobil (8%), TPAO (6.7%), ITOCHU (4.3%), Hess (2.7%).

The South Caucasus Gas Pipeline[22] (SCP) is a natural gas pipeline owned by SCP Consortium. Statoil and BP are the biggest shareholders, each with a share of 25.5%[23]. BP is the designated technical operator while Statoil theis the Chairman of the Shah Deniz Gas Commercial Committee. Statoil pays the transit fee for transporting natural gas from the Shah Deniz gas field in the Azerbaijan sector of the Caspian Sea to Turkey to the Georgian state budget. The 42 inch (1,070 mm) diameter gas pipeline mostly runs in the same corridor as the BTC Pipeline. The initial capacity of the pipeline is 8.8 billion cubic meters of gas per year, and after 2012 its capacity could be expanded to 21 bcm per year. As a transit country, Georgia has an arrangement with the SCP consortium that allows the benefit, equivalent to the 5% raise off in-kind volumes from the annual gas flow through the pipeline. The Georgian Oil and Gas Corporation is also allowed to purchase certain amounts of natural gas at a special discounted commercial price every year for the duration of the intergovernmental agreement.

The North South Gas Pipeline was commissioned during the Soviet era but underwent significant rehabilitation and a major overhaul of the facilities in recent years. Currently owned by GOGC and operated by Georgian Gas Transportation Company (GGTC), the pipeline provides sustainable and mainstream supply of Russian gas to the entire Republic of Armenia. In its role of the National TSO, GGTC imposes an in-kind fee of up to 10% of the transported gas for international transit.

The development of the East-West Energy Corridor is becoming one of the main engines for Georgia's economic development and political stability. Although the pipeline projects themselves are not considered to be a panacea for the region, they are establishing a strong base for sustainable economic growth. Georgia and the whole region are gaining benefits from the project that mainly derive from western interest in the region, which is important for diversification of global supplies of oil.

The much desired and discussed Trans-Caspian pipeline in combination with Nabucco, the Interconnector Turkey-Greece-Italy (ITGI) or the Trans Adriatic

[22] South Caucasus Pipeline Company (SCPC) is responsible for the ownership and operation of the whole gas transport pipeline that starts in Baku and terminates in Erzurum. Government of Georgia provides the right of way and facilitates sustainable operation of this pipeline. SCPC is an incorporated joint venture company made up of 7 shareholders and operated by BP and Statoil, its largest shareholders.

[23] The remaining Shareholder distribution is as follows: Lukoil 10%, Socar 10%, NICO 10%. Total 10%, Turkish Petroleum 9%.

Pipeline (TAP) will increase supplier diversity for EU customers. It will also provide increased stability in the European market, which could soon face a dramatic supply gap from Russia's export dominance in the future. But challenges remain - more work needs to be done in the areas of resource and infrastructure transparency, export and transit policy, and increasing efficiency in domestic energy consumption throughout the entire region.

Access to information regulations

The hydrocarbon transportation industry in Georgia is primarily regulated by the Law of the Natural Resources, the Law on Oil and Gas, the Law on Electricity and Gas, the General Tax Code, several regulations, and international treaties. The Law of Georgia on Oil and Gas and a parliamentary resolution gave the Independent Regulatory Commission of Georgia a special role in energy regulation. The resolution states that for efficient energy management, deregulation of energy production and supply should take place; however the Law is silent in regards to transit arrangements of oil and gas on the territory of Georgia.

The new Georgian Tax Code took effect on January 1, 2011 and introduced significant novelties that generally conform to the reform policies of the government. Amendments were made in parts pertaining to small and medium businesses and importers. One of the government's strategic initiatives is to develop Georgia's trade-transit function by taking advantage of its location between the Caspian and Black Sea Basins for further development of Central Asian transport routes that bypass Russia. The government has established a framework that allows investors to conduct the transit of goods without being subject to Georgian taxes.[24]

Article 230[25] of the Tax Code (paragraph k.) clearly excludes transit goods from imposed tax and refers BTC and SCP projects to their corresponding International Treaties: *"transit, re-import, temporary entry of goods onto the customs territory of Georgia. Upon temporary entry of goods in the customs territory of Georgia (unless temporary entry of goods, ships and airline vehicles defined by article 231,*

[24] PWC summary commentary re the 2011 Tax amendments

[25] Article 33: Tax Exemptions, as well as Article 265.Tax Exemptions (the unofficial English Version of the Tax code was supplied by the USAID Georgia Fiscal Reform Project)

temporary entry of goods defined by Article 42.4 of the Customs Code of Georgia and temporary entry of goods for fulfillment of liabilities under international treaties signed by Georgia (construction of Baku-Tbilisi-Ceyhan and Baku-Tbilisi-Erzurum pipelines)"

However, up to now there had not been any particular legislation in the country that specifically dealt with revenue disclosure requirements. There is only sparse reference in some intergovernmental agreements that may not be specifically relevant to revenue transparency and disclosure requirements.

Analysis of the information availability on hydrocarbon transit

As in all project countries, the information project team requested was the following: information on annual volumes in transit for 2008, 2009, 2010, information on tariffs, information on budget revenues and payments for 2008, 2009, 2010.

The following websites have been explored:

a) Ministry of Energy and Natural Resources www.minenergy.gov.ge - contains no information on volumes, tariffs and revenues;

b) Ministry of Finance www.mof.ge - contains no information on volumes, tariffs and revenues;

c) Ministry of finance/Revenue Service www.www.rs.ge – Information is in highly aggregate form. Impossible to derive pertinent data from the available resources online;

d) Georgian Oil and Gas Corporation www.gogc.ge Only contains information regarding volumes. Data is presented in visual graphs rather than figures, thus all the info is relative and lacks preciseness;

e) Georgian Gas Transportation Company www.ggtc.ge – Has no data resources available online;

f) National Bank of Georgia www.nbg.ge No pertinent information;

g) BP www.bpgeorgia.ge –Does not have readily available data online, however BP Caspian's website contains annual reports with some pertinent data. BP Georgia's website also features the "Enquiry Centre"

section, through which a visitor can address the company with an inquiry.

There were significant challenges in collecting the available data for the project. GOGC and GGTC websites offered considerable amounts of data and general information such as news, shareholding structure and ongoing tendering activities, but lacked systemic information such as commercial and financial reports and documentation, corporate agreements and contracts, reports on financial compliance, international audits, and statistics. Most surprisingly, GOGC, being the second largest state owned company in Georgia, had no indication of any formal disclosure by means of corporate publications, such as quarterly and annual reports and financial statements. BP, the leading international company in hydrocarbon transit in Georgia[26], had much more user-friendly and accessible data on their website. Legal documentation such as intergovernmental and host governmental agreements, as well as relevant production sharing agreements where appropriately formatted and available to download from the corporate website. However, neither BP nor Statoil had any public data in the public domain pertaining to their payments to Government of Georgia for conducting transit activities in the country. The financial statements as published were in full compliance with western practices and business standards, however they lacked the disaggregate listing of financial contributions to the State for the revenue generating operation and services.

To obtain the necessary basis for judgment and data analysis, official information request letters were sent out to the pertaining state agencies and private companies involved in hydrocarbon transit on the territory of Georgia:

a) Georgian Oil and Gas Corporation – no response.

b) Georgian Gas Transportation Company – no response.

c) Statoil Azerbaijan - no response.

d) BP Georgia letter sent on 06.06.11 – reply received 26.09.11

Information included volumes, tariffs and payments.

The written communication was supplemented by phone calls with specific requests to provide responses in writing. Although phone interaction proved useful in obtaining status updates, official responses were still absent for any of

[26] BP Georgia as a registered entity factually and legally represents International consortiums for BTC, SCP and WREP in Georgia

the referred requests, except for the written response from BP Georgia, which was:

a) The value of the tariff paid by BP for Baku Supsa Pipeline and Baku-Tbilisi-Ceyhan Pipeline in 2008-2010;

b) The amount of oil transported by BP through Baku-Supsa Pipeline and Baku-Tbilisi-Ceyhan Pipeline in 2008-2010.

Information regarding gas transit was not provided. The team was advised to refer to Statoil for pertinent inquiries. The official information request letter to Statoil was left unanswered.

The State budget, as approved and amended, had a very poor understanding of specific revenue sources, making it impossible to distinguish between tax basis and payments for such.

In order to assess the current level of gas and oil transit information disclosure to authorities and the public at large, the project team requested companies and the government to provide systematized throughput capacity data. Such information from various sources exists and is in possession of the team. Written communication was to ascertain particular assessments and provide a matching verification for the disclosed revenues to the budget against the factual transported volumes of hydrocarbons.

TABLE I. GAS transit information from the Georgian Government (including state-owned companies)

Benefit Streams	2008	2009	2010	Source of information*
Volumes				
Total volume of gas transit (mcm)	6,5	6	5,6	Internet (GOGC website)
Transit Tariff				
Gas transit tariff	n.a	n.a	n.a	None
Transit Revenues				
Total revenues from gas transit	n.a	n.a	n.a	None

TABLE II. Gas transit information from Private Companies

Benefit Streams	2008	2009	2010	Source of information*
Volumes				
Total volume of gas transit	n.a	n.a	n.a	none
Transit Tariff				
Gas transit tariff	n.a	n.a	n.a	none
Transit Revenues				
Total payments from gas transit	n.a	n.a	n.a	none

TABLE III. Oil transit information from the government (incl. state-owned companies)

Benefit Streams	2008	2009	2010	Source of information*
Volumes				
Total volume of oil transit (in mln MTAs)	30	41	40	Internet (GOGC website)
Transit Tariff				
Oil transit tariff	n.a	n.a	n.a	none
Transit Revenues				
Total revenues from oil transit	n.a	n.a	n.a	none

** Internet or formal information request letter; none - if information is not available through any of these two sources.*

TABLE IV. Oil transit information from Private Companies*
Baku Supsa Pipeline

Benefit Streams	2008	2009	2010	Source of information*
Volumes				
Total volume of oil transit (in barrels)	5,548,000	31,407,000	29,575,000	BP
Transit Tariff				
Oil transit tariff (in USD per barrel)	0,22	0,23	0,23	BP

Transit Revenues				
Total payments from oil transit (in USD)	1,221,000	7,224,000	6,802,000	BP

***Notes:** Data on volumes are in barrels; data on revenues are in US Dollar*

Includes only information provided by BP on Volumes, tariffs and payments for the BP Baku-Supsa (WREP) Oil Pipeline

** Internet or Formal Request for Information (FoI); none - if information is not available through any of these two sources.*

TABLE V. OIL transit information from Private Companies (Baku Tbilisi Ceyhan Pipeline)

Benefit Streams	2008	2009	2010	Source of information*
Volumes				
Total volume of oil transit (in thousands barrels)	246,666	285,782	286,319	Official letter from BP
Transit Tariff				
Oil transit tariff (in USD per barrel)	0,12	0,12	0,12	Official letter from BP
Transit Revenues				
Total payments from oil transit (in USD)	29,600,000	34,294,000	34,358,000	Official letter from BP
Includes only information provided by BP on Volumes, tariffs and payments for the two BP operated BTC Oil Pipeline				

** Internet or Formal Request for Information (FoI); none - if information is not available through any of these two sources.*

2.3. TURKEY

Country summary

Information on tariffs, payments and revenues from oil and gas transit is not publicly available.

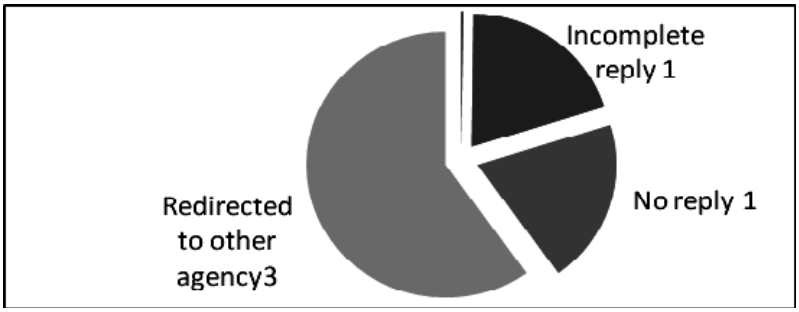
Turkey buys almost all its oil and gas from abroad, and its fast-growing economy is sure to require ever larger volumes of imports over the next decade. At the same time, it lies at the crossroads of the supply routes that connect Russian,

Caspian and central Asian producers with consumers in western, eastern and southern Europe.

All oil and gas pipelines in Turkey are either operated by the state owned pipeline company - BOTAŞ, or by one of its subsidiaries. Only BOTAŞ is responsible for revealing information on hydrocarbon transit. All information requests sent out to other state institutions during the research were transferred to BOTAŞ for this reason. Therefore, there was no way to compare private company records against government records.

The BOTAŞ website contains information on the volume of oil and gas transit but information on tariffs, taxes, fees, and revenues is not publicly available online. This information is not available on governmental agency websites either. Transit tariffs for the BTC pipeline are available in the BTC contract on the BP website. There is no Turkish official website with any documents on the contracts of the pipeline.

Analysis of the requested information on Hydrocarbon Transit from Governmental Agencies and Private Companies



Overview of the hydrocarbon transit sector

With a young and quickly expanding urbanizing population, Turkey is considered to be one of the fastest growing medium to long term consumers in energy among western countries.[27] Securing and maintaining a sufficient energy supply for the growing economy and the increasing population of Turkey is

[27] Turkey 2009 Review, International Energy
www.iea.org/textbase/nppdf/free/2009/turkey2009.pdf

therefore one of the most vital policy aims of the government. Turkey imports nearly all of its natural gas and oil consumption from its neighboring countries; namely Azerbaijan, Iraq, Iran and Russia. According to the 2009 statistics of the Ministry of Energy and Natural Resources, Turkey's energy imports totaled 9.9 billion USD for natural gas, and 6.4 billion USD for crude oil.[28]

Until the market reform of 2001, based on the *Natural Gas Market Law*, the state-owned pipeline company BOTAŞ enjoyed a monopoly over the control of the natural gas market in Turkey. According to the new law, BOTAŞ had to decrease its market share to 20 %. While BOTAŞ has a similar position for crude oil imports from the Iraq-Turkey pipeline, the BTC pipeline is operated by BOTAŞ International Ltd (BIL) (99 % owned by BOTAŞ).
The key stakeholders in Turkey's energy sector are:

a) Petroleum Pipeline Corporation (BOTAŞ): state owned pipeline company focusing on trade and gas transportation;

b) Turkish Petroleum Corporation (TPAO): state owned petroleum company, focusing on exploration and production;

c) Ministry of Energy and Natural Resources: produces and implements energy policies in collaboration with affiliated institutions and relevant public and private entities;

d) Energy Market Regulatory Authority (EPDK):established initially as an independent authority to regulate the electricity market, however its powers were extended to the entire energy sectors following the enactment of Natural Gas Market Law (2001) and Petroleum Market Law (2003).

BOTAŞ currently holds contracts for the following gas and crude oil pipelines, with the exception of BTC which is operated by the BOTAŞ affiliate BIL.[29]

Oil pipelines:

a) Iraq-Turkey Pipeline: Agreement between the government of Turkey and the government of Iraq on 27.08.1973 to transport Iraqi petrol from Kirkuk

[28]"Turkey's natural gas imports total $9.9 billion", Hurriyet Daily News, March 30, 2010 www.hurriyetdailynews.com/n.php?n=turkeys-natural-gas-cost-9.9-billlion-2010-03-30

[29] All information related to other pipelines have been compiled from the 2009 Activity Report of BOTAŞ

to Ceyhan (Yumurtalik) in Turkey. Those parts of the pipeline that fall under Turkish borders are operated by BOTAŞ. Contract not available;

b) Baku-Tbilisi-Ceyhan Pipeline (BTC): Operated by BOTAŞ affiliate BOTAŞ International Ltd (BIL) where BIL is the only operator and BOTAŞ holds client status. Contract available on BP website.

Gas pipelines:

a) Russian Federation-Turkey Pipeline: Agreement between BOTAŞ and Gazprom (former Soyuzgaz export of the USSR) on 14.02.1986 to transport 6 billion m3/year of Russian gas to Turkey for a period of 25 years. Contract is not available;

b) Eastern Anatolia Pipeline: Agreement between Government of Turkey and Government of Iran on 08.08.1996 to transport a maximum of 10 billion m3/year of Iranian and other Eastern-sourced gas to Turkey. Contract is not available;

c) Samsun-Ankara Pipeline (Blue Stream): Agreement between BOTAŞ and Gazprom (formerly known as Gazexport) on 15.12.1997 to transport a maximum of 16 billion m3/year of Russian gas to Turkey through the Black Sea for a period of 25 years. Contract is not available;

d) Russian Federation-Black Sea-Turkey pipeline: The parts of the pipeline that are included within the Turkish borders are operated by BOTAŞ, and those inside Russian borders are operated by Gazprom. The pipeline was officially taken into operation by BOTAŞ in 2003 and started functioning in 2005;

e) Turkey-Greece pipeline: Agreement between BOTAŞ and DEPA (Greece) on 23.02.2003 to transport a maximum of 750 million m3/year gas to Greece;

f) Baku-Tbilisi-Erzurum Pipeline (Shah Deniz): Agreement between BOTAŞ and SOCAR (Azerbaijan) on 12.03.2001 to purchase and transport Azeri gas to Turkey through Georgia.

Access to information regulations

The Right to Information Act pertains to the right to acquire the information in every field of public administration, however, just as in any other Right to Information Act in other countries; this right also has its exceptions. Some of

these restrictions that also concerns the purposes of this study are: State secrets, information and documents on the economic interests of a country and commercial secrets.

However, although the Law stipulates the restrictions on Right to Information, it does not make any conceptual clarification as to what such terms refer to. For instance, there is no explanation as to what a state secret is or what an information or document on intelligence entails. There is no supplementary bylaw that clarifies these principles either. There is no separate law on State Secrets or Commercial Secrets.

Because of a lack of such clarifications, the contours of the Right to Information also remain very much ambiguous. The downside of this ambiguity is that the public administration can make use of this definitional ambiguity to withhold information from applicants. However, even in cases where the public authority in question does not reveal any information, it has to provide a reason and explain the means and the time needed to object to this situation. The public authorities are also obliged to reply to information requests within 15 working days from the day the application was made.

Analysis of the information availability on hydrocarbon transit

Before making any information requests, online research was carried out by the team from the websites of relevant institutions. The only available information found was the volumes of oil and gas transported through transit pipelines in Turkey:

a) BTC Project Directorate www.btc.com.tr -included information on transit tariffs for the BTC pipeline;

b) BP Legal Agreements Section www.bp.com -included information on transit tariffs for the BTC pipeline;

c) BOTAŞ www.botas.gov.tr -included information only on volumes;

d) d)Energy Regulatory Authority www.epdk.gov.tr – no information on volumes, tariffs and revenues;

e) Ministry of Energy www.enerji.gov.tr -no information on volumes, tariffs and revenues;

f) Treasury www.treasury.gov.tr - no information on volumes, tariffs and revenues.

At the second stage, information requests were filed to relevant public authorities. The institutions were:

a) Ministry of Energy - transferred request to BOTAŞ;

b) Energy Market Regulatory Authority -recommended to send our request to Ministry of Energy;

c) Treasury - transferred to Ministry of Energy;

d) BOTAŞ- BOTAŞ sent its Activity Report;

e) BTC Project Directorate– no reply.

The only private sector actor that was solicited was BOTAŞ International Limited, the private enterprise (99 % owned by BOTAŞ, the state company) that is operating Baku-Tbilisi-Ceyhan.

In two weeks' time, the research team called the relevant authorities to monitor the progress. Having observed that some of the applications were not properly addressed, a second round of applications was made on the 21st of June, 2011 to some of these institutions.

An answer was received from every public institution applied. However, the Ministry of Energy and Energy Regulatory Authority and Treasury replied by saying this information is in the possession of BOTAŞ. BOTAŞ replied to our request with a letter saying that within the confines of the right to information, the only information it could provide was their Activity Report pertaining to 2009. BOTAŞ was not explicit about why it would not provide the requested information. The activity report does not reveal any of the data required in the template except for the volumes of gas transported through the Turkey-Greece gas pipeline which is mentioned in the Activity Report in passing (under the graph that shows the total gas exports to Greece) rather than a conscious effort to reply to our information request.

As all oil and gas pipelines are either operated by BOTAŞ, or by one of its subsidiaries, it is in fact only BOTAŞ which is responsible for revealing the information requested. All the information requests sent out to other ministries

or public bodies were transferred to BOTAŞ for this reason. Therefore, there is no way of comparing private company records against government records.[30]

With regards to contractual transparency, there is no official disclosure of contracts by the Turkish state in any of the websites of the related public bodies. However, since the Turkish government signs the contracts with other stakeholders including private companies, some of the transit pipeline contracts are made public due to disclosure policies of these private companies.[31]

The internet research on BOTAŞ website only reveals the volume of oil and gas transits.[32] The bulk of the requested information on oil and gas transit through the country (i.e. tariffs, taxes, fees, and revenues) is not publicly available online.

Since there is no cross checking mechanism to compare what government data fares compared to company data, the quality and the quantity of information revealed is only dependent on the approach of BOTAŞ. Apparently, even the Treasury is not qualified to reveal how much energy specific revenue is generated for state coffers from transit pipelines. For this reason, the transparency of BOTAŞ becomes crucial to make any healthy analysis on the topic.

There are media leaks on the tariff rates and tax revenues with regards to the BTC oil pipeline because of the controversies over the losses of BOTAŞ International Limited in operating the Turkish portion of the pipeline.[33] The same is true for gas purchase agreements between Turkey and Russia. However, no official information was obtained on these matters.[34]

While the activity report of the company reveals a detailed account of the audited final accounts of BOTAŞ, there is no way to discern how much of the revenues

[30] The only exception is subsidiaries which were set up by BOTAŞ and the consortium members to run large scale transit pipelines. For instance, BIL is the subsidiary of BOTAŞ (99 % owned by the company) to run BTC oil pipeline.

[31] BTC oil pipeline agreement can be accessed through BP website www.bp.com/sectiongenericarticle.do?categoryId=9029334&contentId=7053632

[32] For oil transit volumes, please check: www.botas.gov.tr/index.asp. For gas transit volumes, please check page 7 of : www.enerji.gov.tr/yayinlar_raporlar/Sektor_Raporu_BOTAS_2010.pdf. The volumes refer to purchase amounts from different countries. None of the gas transited through a certain pipeline is sold into other countries, since none of the gas transit pipelines go into a third country. For this reason, the amount purchased equals the number transited through that gas pipeline.

[33] www.ekonomi.haberturk.com/makro-ekonomi/haber/619866-baku-tiflis-ceyhan-borc-hatti

[34] www.turksam.org/tr/yazdir627.html

were generated through transit pipelines. There is also no information as to how much of this revenue goes to the state budget. There is again no information as to how much of the money generated by BOTAŞ International Limited or other affiliates goes to both the BOTAŞ budget and the state budget.

The following figures reveal how much of the information related to oil and gas transit specific revenues are open to public scrutiny.

TABLE I. Oil Transit Information from Government, (state-owned company) Turkey-Iraq Oil Pipeline

Benefit Streams	2008	2009	2010	Source *
Volumes				
Total volume of oil transit/transportation (thousand barrels)	135.522	167.6	132.278	internet
Transit Tariff				
Transit tariff for oil transportation	n.a	n.a	n.a	none
Transportation Revenues				
Total revenues from oil transit/transportation	n.a	n.a	n.a	none

Notes: *Data on volumes are in million cubic meters (mcm); data on revenues are in local currency (BGN).*

** Internet or Formal Request for Information (FoI); none - if information is not available through any of these two sources.*

TABLE II. Oil Transit Information from Government, (BOTAŞ) Baku-Tbilisi-Ceylan Oil Pipeline

Benefit Streams	2008	2009	2010	Source*
Volumes				
Total volume of oil transit/transportation (thousand barrels)	264.092	285.492	288.173	internet
Transit Tariff				
Transit tariff for oil transportation	$0.55	$0.55	$0.55	(from the contract on BP website)

Transportation Revenues				
Total revenues from oil transit/transportation	n.a	n.a	n.a	none

Notes: *Data on volumes are in million cubic meters (mcm); data on revenues are in local currency (Turkish lira)*
** Internet or Formal Request for Information (FoI); none - if information is not available through any of these two sources.*

TABLE III. Gas Transit Information from Government (BOTAŞ), Russia-Turkey(including Samsun-Ankara, Russian Federation-Black Sea-Turkey and Russian Federation-Turkey Gas Pipelines)

Benefit Streams	2008	2009	2010	Source*
Volumes				
Total volume of gas transit/transportation (mcm)	22962	17207	14535	internet
Transit Tariff				
Transit tariff for gas transportation	n.a	n.a	n.a	none
Transportation Payments				
Total payments for gas transit/transportation	n.a	n.a	n.a	none

Notes: *Data on volumes are in million cubic meters (mcm); data on revenues are in local currency (Turkish lira)*
** Internet or Formal Request for Information (FoI); none - if information is not available through any of these two sources.*

TABLE IV. Gas Transit Information from Government, (BOTAŞ), SCP (Shahdeniz) Gas Pipeline

Benefit Streams	2008	2009	2010	Source of
Volumes				
Total volume of gas transit/transportation (mcm)	4580	4959	4521	internet
Transit Tariff				
Transit tariff for gas transportation	n.a	n.a	n.a	none
Transportation Payments				
Total payments for gas transit/transportation	n.a	n.a	n.a	none

Notes: *Data on volumes are in million cubic meters (mcm); data on revenues are in local currency (Turkish) ira)*
** Internet or Formal Request for Information (FoI); none - if information is not available through any of these two*

TABLE V. Gas Transit Information from Government,(BOTAŞ), Turkey-Greece Gas Pipeline

Benefit Streams	2008	2009	2010	Source*
Volumes				
Total volume of gas transit/transportation (mcm)	436	709	n.a	FoI
Transit Tariff				
Transit tariff for gas transportation	n.a	n.a	n.a	none
Transportation Payments				
Total payments for gas transit/transportation	n.a	n.a	n.a	none

Notes: *Data on volumes are in million cubic meters (mcm); data on revenues are in local currency (Turkish lira).*

** Internet or Formal Request for Information (FoI); none - if information is not available through any of these two sources.*

TABLE VI. Gas Transit Information from Government, (BOTAŞ), Turkey-Iran Gas Pipeline

Benefit Streams	2008	2009	2010	Source*
Volumes				
Total volume of gas transit/transportation (mcm)	4113	5252	7765	internet
Transit Tariff				
Transit tariff for gas transportation	n.a	n.a	n.a	none
Transportation Payments				
Total payments for gas transit/transportation	n.a	n.a	n.a	none

Notes: *Data on volumes are in million cubic meters (mcm); data on revenues are in local currency (Turkish lira).*

** Internet or Formal Request for Information (FoI); none - if information is not available through any of these two sources.*

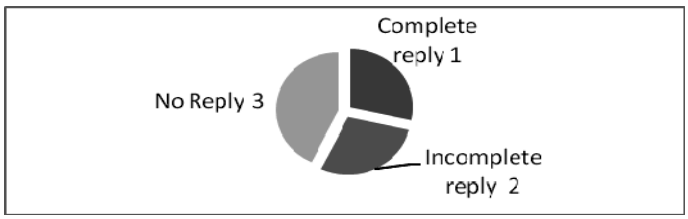
2.4. UKRAINE

Country Summary

The EU's dependence on hydrocarbons from Russian increases the Ukraine's importance to ensure the energy security of Europe. Trunk pipeline systems hosted by Ukraine are used in combination with underground gas storage facilities to balance gas consumption in Europe during peak periods. The 2009 Gas Crisis in Europe brought the vulnerability of these arrangements to light: Non-transparent and obscure transit arrangements provide grounds for various interpretations between involved parties, including conflicts.

Among the hydrocarbon transportation system, the transit of natural is the most incomprehensible. No data in the public domain is readily available, even when relevant laws and regulations officially authorize such access to information. In this study some minor information (e.g. some tariff-related information) was collected off the web sites of respective entities involved in transit in addition to other open resources.

Analysis of the requested information on hydrocarbon transit from governmental agencies and Private companies



Overview of the hydrocarbon transit sector

Ukraine possesses Europe's longest gas transmission system (GTS), which provides transit to 19 countries west of Ukraine (the EU, the Balkan Region, Switzerland, and Turkey).

The Ukraine GTS is operated by the national joint stock company (NJSC) NaftoGaz Ukrainy, fully owned by the State. NaftoGaz Ukrainy is managed by the Ministry of Energy and Coal Industry of Ukraine. Gas transportation, transit and storage, including underground gas storage facilities (UGSF), is effectively

executed by UkrTransGaz SE; and by ChernomorNefteGaz, PJSC, which ensures gas transportation and storage (without transit) within the Crimean Peninsula.

Gas transit pipelines in Ukraine are:

- Urengoy – Uzhgorod;
- Progress;
- Yelets-Kremenchuk-Ananyev;
- Soyuz;
- Urengoy – Novopskov;
- Torzhok-Dolina;
- Dolina-Uzhgorod-State border IIn;
- Ananyev-Tiraspol-Izmail;
- Komarno-Drozdovichi In + IIn;
- Ivatsevichi-Dolina In + IIn;
- Khust-Satu-Mare;
- Offtake for Beregovo In + IIn;
- Ananyev-Chernovtsy-Bogorodchany (AChB).

Commercial terms and conditions for gas transit across the territory of Ukraine are regulated by the Contract on Volumes and Terms of Russian Natural Gas Transit through the Territory of Ukraine for the period of 2009 - 2019, executed by NaftoGazUkrainy, NJSC and Gazprom on November 19, 2009. While the contract is confidential, its text was nevertheless published in the media (though it could not be deemed an official publication).

There are a number of international agreements on the use of the GTS of Ukraine concluded between Ukraine and the Russian Federation (inter-government agreements of 18 February 1994, 22 December 2000 and 04 October 2001). However, the mentioned Ukrainian-Russian intergovernmental treaties, while still formally in force, have been in reality in default since January 2006. Starting from January 2006, foreign-economic relations in the area of natural gas transit through the territory of Ukraine have been regulated only at the level of commercial entities (more specifically, NaftoGazUkrainy and Gazprom).

UkrTransGaz currently uses the GTS of Ukraine for transit and underground storage of predominantly Russian gas. In recent years, Russia has reduced the volume of gas transported through the Ukrainian GTS due to a slump in the demand for Russian gas in Europe (Annex 3). This has provided Ukraine with a possibility to offer free transit and UGSF storage capacities to third parties in accordance with its commitments as a result of Ukraine's accession to the European Energy Community. A practical implementation of the provision that assures equal access of all parties concerned to the GTS of Ukraine may be possible - provided additional regulations are adopted, inter alia, by relevant public authorities (Ministry of Energy and Coal Industry, NERC).

The oil transmission system of Ukraine is comprised of 19 main oil pipelines with a total length of 4,766.1 km. The most significant are:

- Dolina Drogobich Pipeline;
- Mozir-Brody-Uzhgorod (Druzhba) pipeline;
- Glinskoi-Rozbichevskoe-Kremenchug Pipeline;
- Kremenchug-Herson-Odessa Pipeline;
- Odessa- Brody Pipeline.

In total, Ukraine transports crude Russian oil in excess of 110 million metric tons a year.

UkrTransNafta uses Ukraine's oil transmission system to transport Russian and Kazakh crude to domestic oil refineries and also to some EU Member States, such as the Slovakia and Hungary. The oil extracted in Ukraine is transported to oil refineries in the western part of the country. The available infrastructure also allows for the transmission of Azerbaijan crude oil into Ukraine and to third countries (Belarus). Russia has reduced the volume of its oil transported through the oil transmission system of Ukraine in recent years. A further substantial decrease in crude oil transportation through the territory of Ukraine is expected, following the Russian Federation's commissioning of its BTS-2 in 2012. Thus, an increase in oil transport volumes is only possible through the development of the Odessa – Brody Project.

Tariffs on crude oil transportation through main pipelines to customers in Ukraine are established by NERC in accordance with Cabinet of Ministers of Ukraine Resolution No. 1548, of 25.12.1996. At the same time, the issue of tariffs on crude oil transit through main pipelines has not been legislatively regulated

and is independently resolved by transport companies in their foreign-economic contracts.

Access to information regulations

In 13.01.2011, the Law of Ukraine on Access to Public Information was adopted. This Law established the procedure for providing and exercising everyone's right to information on possessions of governmental institutions and other public information managers, as well to information of public concern.

Under Par. 1, Art. 13 of this Law, public information managers include, *inter alia*, commercial entities that have dominant positions in the market, or those bestowed with special or exclusive titles, or those being natural monopolies in respect to the information on terms and conditions of the supply of goods and services or their prices. NaftoGazUkrainy represented by UkrTransGaz and UkrTransNafta are also information managers (within the meaning of the Law of Ukraine on Access to Public Information) and must provide requested information about terms, conditions and prices for the delivery of natural gas and crude oil storage and transportation through main pipelines.

Moreover, commercial entities must also provide additional information whenever such information is of public interest (publicly demandable information). Currently, the legislation of Ukraine does not contain an exhaustive list of publicly demandable information, therefore, whenever an applicant specifically requests this type of public information, he must also include specific reasons to substantiate the need for the public disclosure of such information in his inquiry.

NaftoGazUkrainy and UkrTransGaz as public joint-stock companies have to publish their annual financial reports and reporting documents submitted to relevant public agencies. As of January 1st, 2012, their annual financial reports and annual consolidated reports must be prepared in compliance with international standards, complete with an audit report.

Analysis of the information availability on hydrocarbon transit

Information on the performance of Ukrainian gas and oil transmission systems was obtained through website research and respective inquiries to governmental authorities. The following websites have been monitored:

a) Ministry of Energy and Coal Industry www.mpe.kmu.gov.ua - included information on oil and gas transit volumes;

b) Naftogaz - www.naftogaz.com–information on volumes;

c) Ukrtransgaz www.utg.ua - contains only information on gas transit volumes;

d) Ukrtnansnafta - www.ukrtransnafta.com - included information on oil transit volumes for 2009 year;

e) Blackseagas - www.blackseagas.com - contains only information on gas transportation tariffs;

f) National Electricity Regulatory Commission www.nerc.gov.ua - contains information on oil, gas transportation tariffs;

g) National Bank of Ukraine - www.bank.gov.ua – no information on volumes, revenues and tariffs.

The following state and private agencies have been sent formal information request letters:

a) The Ministry of Energy and Coal Industry of Ukraine – no reply;

b) State Customs Service – complete reply;

c) State Tax Administration- no reply;

d) NaftoGazUkrainy, NJSC- complete reply;

e) UkrTransGaz, SE – incomplete reply including only tariffs without any information on volumes or payment;

f) UkrTransNafta, PJSC - incomplete reply including only tariffs without any information on volumes or payment;

g) ChernomorNaftoGaz, PJSC – no reply.

Because information following the primary inquiry was incomplete, appeals to the management of UkrTransGaz, SE and UkrTransNafta, PJSC were filed under the laws in force. Additional information (e.g. some of the tariff-related information) was collected from official web sites of the commercial entities concerned, as well as from other open resources.

Information on Gas

The Ministry of Energy and Coal Industry of Ukraine and the State Tax Administration of Ukraine did not respond to our inquiries. The State Customs Service of Ukraine and NaftoGazUkrainy furnished information on the gas transport sector available to them. UkrTransGaz only provided information on tariffs on gas transportation to domestic customers that are established by NERC, which must be published. The company did not furnish further information (on transit tariffs, revenues earned, taxes paid), referring to its classified status. The appeal to the company management for a request for the missing information was rejected due to the corporate interpretation of the applicable legislation in force in Ukraine. They specifically mentioned the company's right to independently classify information and decide whether the requested information really falls within the "publicly demandable" category.

The position taken by UkrTransGaz is unwarranted. In particular, the laws of Ukraine do not contain an exhaustive list of publicly obtainable information. Besides, the Cabinet of Ministers of Ukraine's Resolution No. 611, of 09.08.1993, directly stipulates that data necessary for tax verification purposes and related documents on their payment do not constitute a "commercial secret". The position of UkrTransGaz in respect of non-disclosure of the requested basic information (that is disclosed by any public corporation keen to respect at least a minimum of transparency standards of its operation) shows this company is not ready for corporatization, IPO (Iinitial Public Offering) placement or operation on terms and conditions universally accepted on the European gas market.

The tariffs of natural gas transit are currently set by commercial entities concerned with their commercial contracts without supervision by the market regulator (NERC) and are regarded confidential. Such an approach breaches the principle of equal access to the GTS and renders it impossible to conduct non-discriminatory tariff policies in respect of gas transit.

Different respondents presented differing quantitative indicators of gas transit (see Tables below). It should be noted that even UkrTransGaz, SE's website quotes two indicators for 2010: (155 billion cu m on the main page and 148.5 billion cu m, in the Performance Indicators Section). Gas transit volume figures show considerably lesser discrepancies. It is no less remarkable that the block with 2009 data on Ministry of Energy and Coal Industry's web site has two gas transit indicators presented as y/y comparison for 2010 and 2009. Certain material discrepancy in transit volume figures can be found in the materials presented by the State Customs Service and NaftoGazUkrainy.

Proceeds from gas transportation were only showed by NaftoGazUkrainy and this factually excludes any possibility of comparing the figures with information from other respondents.

Information on Oil

UkrTransNafta refused to furnish the requested information, referring to an ungrounded interpretation of the legislation. The Ministry of Energy and Coal Industry of Ukraine and the State Tax Administration of Ukraine did not respond at all to inquiries.

The State Customs Service of Ukraine and NaftoGazUkrainy furnished information on the crude oil transport sector available to them. UkrTransNafta only released information on tariffs on crude oil transportation to domestic customers that are established by NCER and which must be published. The company did not furnish other information (on transit tariffs, revenues earned, taxes paid) referring to its classified status.

Quantitative indicators on crude oil transport and transit show no material discrepancies in responses from various respondents. It was not possible to find crude oil transit tariffs through respondent's responses or on their websites. When establishing transit tariffs, the company bases its decision on the provisions of the Law of Ukraine on Prices and Pricing. Therefore the approach for determining transit tariffs is regulated less by clear legislative provisions, than by the party concerned (UkrTransNafta) at its sole discretion. As financial proceeds from crude oil transportation were presented only by NaftoGazUkrainy, it effectively ruled out any possibility to compare these to indicators from other respondents.

TABLE I. Gas transit information from Government

Benefit Streams	2008	2009	2010	Source
Volumes				
Total volume of gas transit (mcm)	119 900	**95 200**	**98 600**	Internet
Transit Tariff				
Transit tariff for gas transit	n.a	n.a	n.a	None
n.a				
Total revenues from gas transit	n.a	n.a	n.a	None

TABLE II. Gas transit information from companies

Benefit Streams	2008	2009	2010	Source
Volumes				
Total volume of gas transit (mcm)	119 600	95 800	98 600	Official letter NaftoGaz
Transit Tariff				
Transit tariff for gas transit	n.a	n.a	n.a	none
Total revenues from gas transit	n.a	n.a	n.a	none

TABLE III. Oil transit information from Government

Benefit Streams	2008	2009	2010	Source*
Volumes				
Total volume of oil transit (mt)	32.8	29.1	20.1	Internet
Transit Tariff				
Transit tariff for oil transit	n.a	n.a	n.a	none
Total revenues from oil transit	n.a	n.a	n.a	none

TABLE IV. Oil transit information from from companies

Benefit Streams	2008	2009	2010	Source*
Volumes				
Total volume of oil transit (mt)	32.8	29.1	20.1	Official Letter NaftoGaz
Transit Tariff				
Transit tariff for oil transit	n.a	n.a	n.a	none
Total revenues from oil transit	n.a	n.a	n.a	none

CONCLUSIONS

Information on transit tariffs and state budget revenues from transited oil and gas is not publicly available in Bulgaria, Georgia, Ukraine and Turkey

This study is the first attempt to assess the transparency of the hydrocarbon transit environment in Bulgaria, Georgia, Ukraine and Turkey and to compare existing tariff schemes and budget revenue contributions across the sample of the countries that are essential from their energy transit potential standpoint.

The major conclusion of the report is that there are challenges in getting information on tariffs for oil and gas transit as well as state budget revenues from transit operations in Bulgaria, Georgia, Ukraine and Turkey. Websites of relevant state authorities does not include information on state budget revenues and tariffs for transited oil and gas, and this information is also not available upon request. The information on volumes of transited oil and gas is available in aggregated form in all of those countries.

Each country in this report represents an actor with strong civil society presence and aspirations towards the principles and values of the greater European family. Yet, there is an ample room for the improvement of the hydrocarbon transit transparency sector. This project is an effort to deal with such transparency challenges in this vital economic sector on a comprehensive level.

Interregional arrangements for hydrocarbon transport and reliability of transit is becoming ever more important with the increase in energy trade and the growing integration of energy markets. The increasing volume of hydrocarbon trade among the states of different geographic regions often involves transportation over large distances and multiple national borders. Transit conditions for natural gas and crude oil have therefore become a topic of great interest, not only for the parties affiliated with the commercial processes itself, but for the stakeholders at large. The general interest of such arrangements is underscored by the fact that large-scale interregional projects of hydrocarbon transportation are usually accompanied with a variety of anticipations from the stakeholders or the general public. Undoubtedly, such projects are typically coupled with significant and undisputed economic benefits, but a precise definition of what these benefits correspond to is usually left behind the curtain. Needless to say - there exists an apparent shortage of choice of instruments that duly address such disclosure challenges.

In many recent instances, there were cases when transit conditions in any given country were a major issue. There are a number of cases where an evaluation of forthcoming projects is underway and a constituency's opinion is on the agenda of a decision-making panel. In tariff-based transport arrangements and hydrocarbon transport in particular, where any project potentially triggers broader implications for the public at large, an assessment of governance is usually made at an early stage and disclosure of information as a means to manage governance risks is appropriate. Accordingly, subject to applicable legal restrictions, sector-specific initiatives should be welcomed on various levels to specifically tackle the disclosure of project-related information, in addition to the disclosure of specific tax payments and revenue contributions of a different kind.

When considering the development of large scale infrastructure projects, coupled with significant transportation arrangements (those expected to account for about one percent or more of government revenues), anticipated net benefits to the state budget, as well as project value for general stakeholders, should be reviewed well in advance of project commencement. Whether the balance of benefits and project risks (such as environmental or social risk) is acceptable or not, it is a critical aspect of project evaluation and often turns into a public debate. Therefore, it is extremely important to have mechanisms in place that will allow and promote transparency of transit revenue payments to host governments. However, it is extremely difficult to establish a totally new general framework within which energy companies will be required to publicly disclose their material project payments for transit to the host government (in most cases such payments occur in the form of taxes, royalties or intricate benefit sharing), and the relevant terms of key agreements that are of public concern (in most cases – Host Government Agreements and Intergovernmental Agreements).

4. RECOMMENDATIONS

Governments and private companies operating in transit industries should implement EITI Transit as an already tested mechanism to solve transparency related shortcomings.

The major recommendation for governments and private companies operating in transit industries is to launch and implement EITI Transit in Bulgaria, Georgia, Ukraine and Turkey as it is an already tested mechanism to solve transparency related shortcomings. Basic principles of EITI can be transformed into the EITI Transit unchanged, once transit countries and private companies involved in

transit operations announce their readiness to disclose revenues and payments for transit operations, thereby enhancing wider accountability and transparency in the sector.

Recommendations for the Host Governments

Developing certain requirements on transparency, such as EITI Transit, will benefit and generally help create a competitive business environment. By implementing EITI Transit, host countries will create the foundation of an investor-friendly and competitive national energy market and establish the country as an important junction of energy transit and connecting routes.

In those states that host and international transit project, the implementation of EITI Transit would constitute public disclosure of material project payments to the host government (such as taxes, royalties, benefit sharing etc.) as a baseline revenue transparency requirement and where applicable, adherence to specific disclosure requirements in certain cases will be necessary. Receipts to the budget are reconciled with declared payments from energy companies by independent third party auditors, with active engagement of civil society, thereby enhancing wider accountability and transparency in the country.

National state champions in the midstream business (vertically integrated state-owned companies such as Turkey's) that effectively control key oil and gas transportation arrangements are quite hard to tell apart from the State itself. As duly noted in the report, this represents a real challenge in the revenue disclosure process. In such cases, it is extremely difficult to observe transparent revenue management, particularly in terms of accountability for revenue flows between state-owned corporations and the state.

Recommendations for Private Companies

Energy companies would benefit from a uniform reporting requirement, such as EITI Transit, which would apply to domestic and foreign firms doing business on the territory of an EITI implementing country - one that mandates revenue transparency reporting for their operations.

The situation was different with international oil and gas principals. It is a general rule of thumb that international oil companies and companies that are publicly listed on US and European stock markets are much more prudent and discreet than leaders wholly owned by states. Nevertheless, the project team

found it extremely difficult to single out budget revenue streams from the highly aggregated financial information that was made available through direct communication by international principals. In most cases, Information disclosed by international energy companies is for the benefit of shareholders and does not match a country-by-country profile, suitable for the purposes of EITI Transit.

By imposing EITI Transit as a tool for adherence to international transparency, best governance and revenue management standards in projects for transportation of hydrocarbons, companies and host governments may inadvertently be subjected to certain extra costs and resource spending. Most certainly, significant differences of opinion exist regarding added costs or intangible benefits of such disclosure obligations. Direct costs related to reporting compliance are minimal and negligible in most cases, since most of the companies concerned are already compliant with the best western principles and standards of doing business. However, in the most common scenarios, objection from the company to comply with such reporting schemes is attributed to the fear of losing the competitive advantage amongst industry peers. Disclosure of various budget payments by companies inadvertently exposes their commercial settings and business particularities. All this is very similar to the environment where companies are obligated to publicly disclose standards and procedures governing their political activity. In most cases, companies do not disclose their political contributions or various payments that are used for political purposes, thus shying away from unnecessary attention and undesired publicity. As a result, the company's management typically hesitates to make principle decisions on whether to accept or reject public disclosure/reporting obligation. This is mostly due to the difficulty of isolating and assessing the impact of transit revenue disclosure requirements on the general operation of the company.

Additional energy imports to Europe are needed and it is in Europe's strategic interest to maintain the development of additional hydrocarbon supplies in the most diversified and optimal manner, obviously by taking good care of the transparency aspects of forthcoming energy projects.

This is consistent with the recently adopted EU Energy Council conclusions on the Third Strategic Energy Review. The EU needs to act effectively to deliver sustainable, secure and competitive energy. A balance must be struck between "the economic viability of the projects, their contribution to energy security, and their openness and commercial intelligibility". The latter is critical for establishing sustainable and workable structures that would withstand abundant crisis, trust-related tensions and other disturbances. To achieve these, transparent mechanisms of checks and control – such as EITI Transit must be employed.

CHAPTER 7

Prospects for the EU gas market

LNG + UNCONVENTIONAL GAS VS. PIPELINE SUPPLIES. A REVIEW OF EUROPEAN MARKET TRENDS

Michael Gonchar,
Director of energy programs, "NOMOS" Center, Ukraine

The realities of global gas markets are rapidly changing. In Europe, it was risen by the cumulative amount of factors that can be stated as 3+1. Three crises, the two continental crises of 2006 and 2009 resulting from Russia's termination of its gas supply to Europe and the 2008 global financial; plus a shale gas revolution of in the U.S. It is possible that effect of the following factors sum as 1+3 will be turned on in near future. Another wave of the global financial crisis and three armed conflicts in the Persian Gulf, the Caspian Sea and the South Caucasus, can, together, lead to fundamental changes in the European energy mapduring the current decade.

Modeling the European gas market for the long term (2020), by which projects such as TANAP and Nabucco West can be theoretically realized, reveals the following situation:

- completion of pan-European gas infrastructure integrated through inter-connectors;
- increase in the capacity of LNG through the construction of new re-gasify terminals, and the expansion of the existing ones;
- introduction of the gas market Target Model with Virtual Trading Points;
- homogenization of the EU regulatory space by creating gas-trading zones instead of national gas markets.
- implementation of the right to EU energy for peripheral neighboring countries which are members of the Energy Community (Balkan countries, Ukraine, Moldova, Georgia).

Such a situation will mean that by 2020 the EU will have an integrated gas circuit with gas supplies from a variety of sources (both pipeline and LNG) and unified "rules" governing both within EU borders and a number of energy- security important neighbors.

Within this context, any additional volumes of gas from diverse sources would be welcomed as such supplies increase both the level of diversification and market competition. This scenario is both positive and promising for European businesses and politicians complaining of gas prices that are 5-6 times higher than in the U.S. market and the reduced competitiveness of European industry. U.S. expert Ambassador C. Smith addresses Europe's gas situation in the article Unconventional Gas and European Security: Politics and Foreign Policy of Fracking in Europe. He writes that despite the fact that the European gas industry is losing its competitiveness compared to the U.S., Europeans do not wish to develop unconventional gas, giving preference to the development of renewable energy because of environmental considerations. Based on this and on the gradual decrease of extraction from the North Sea shelf, Europe is interested in additional volumes of gas, in particular, from the regions of Central Asia and the Caspian Sea.

But this gas is not the only alternative to Russian supplies and unconventional gas. If we start from the perspective of 2020, it is very likely to expect:

- an increase of northern offshore gas production in Norway from shelves of the Norwegian and Barents Seas;
- new volumes of LNG from North America (U.S. and Canada);
- the appearance of large amounts of unconventional gas in Europe.

These factors can lead to an increase in the supply of gas to the EU market, and strengthen the competition between gas flows.

Meanwhile renewable energy is being developed and coal is undergoing a renaissance in Europe amid high prices for oil and gas as well as the Euro zone's deep economic problems. It seems that nuclear power in Europe, except for a few countries (Germany, Austria, Switzerland), will retain its status quo, despite the accident at Japanese "Fukushima-1" plant in 2011.

In addition, the EU gas market will be influenced by Russia, and to a lesser extent, Chinese, Turkish, and Azerbaijani factors. Russia is currently attempting to continue the expansion of its gas exports to Europe through implementation of bypass pipeline projects and by blocking the development of competing

pipelines. China's policy is aimed at preserving Central Asia's gas resources for its own development and keeping prices much lower than in the rest of the world. This applies to the Caspian Sea as well. China is not interested in the implementation of the Trans-Caspian gas pipeline and will work to counteract the potential project by using its influence on Ashgabat, which is quite credit-dependent on Beijing. As for the Turkish factor, it should be noted that the Trans-Caspian project fiasco in the late 90's was due to Ankara's reorientation to the Russian «Blue Stream» project.

Currently, on condition of support by extraction companies working in Azerbaijan, the Turkish-Azerbaijani tandem is able to impose its vision on the realization of gas supply projects from the Caspian Sea on Brussels. Baku, of course, is first of all interested in its own gas exports, and volumes of Turkmen gas are competing to Azerbaijan. All of this together increases the likelihood of projects bringing West Caspian gas resources to the EU market. The European Union will have to give the green light to TANAP because Brussels does not have enough power for an agreed policy. A striking example of this is the support by a number of EU member states (Bulgaria, Slovenia, Austria, Hungary) for the Russian "South Stream" project over the EU priority Nabucco.

The Russian-triggered European gas crises of 2006 and 2009 have left a certain mark. Gas is considered an instrument of Russian foreign policy, and there is resistance in many European countries to increasing imports from Russia. Buyers prefer not to increase and even reduce the import of Russian gas both for political and commercial reasons. In addition, in late January and early February 2012, Russia was unable to meet the gas demand of European consumers during the peak winter cold spells, confirming the existence of a deep systemic crisis in West Siberian gas production, where depletion of giant fields (Yamburg, Nadim, Medvejye, Pur-Tazovski) is approaching threatening dynamics.

Twenty percent of the gas to Europe is already delivered in liquid form. After 2015-2016 there will be a serious additional LNG offer from new producers in North America, Australia, and East Africa. The Asian demand for gas is now slowing and therefore Russia will face additional competition in global gas markets. Even though the cost of LNG from North America to Europe will be quite high, it will be competitive with the price of Russian gas, which is tied to oil quotations.

*The Economist's*special report "Unconventional gas bonanza," noted that the price of gas in the U.S. market fell to $2 MBtu ($75.8 per 1 thousand cubic meters) for

the first time since 2001. This encourages excessive gas exports to foreign markets, especially in liquefied form. According to the Eurasia Group forecast, the world capacity of LNG will double by 2020 from 278 million tons in 2011 to 526 million tons in 2020. Liquefied gas produced in the U.S. and delivered to distant markets, will cost up to $10 MBtu (~ 379,12 $ / 1000 cubic meters). This is a competitive price compared to the traditional price of natural gas price bound to oil prices, $16 MBtu (606,5 $ / 1000 cu. m).

Ambassador K. Smith also draws attention to the fact that over the past five years there has been a major transformation of the U.S. gas market. The country has become the world's largest gas producer, surpassing Russia, and become no longer dependent on gas imports. Within the next few years the U.S. will become a strong LNG exporter to European and Asian markets.

According to the U.S. Energy Information Administration data from August 17, 2012, the total capacity of 16 LNG terminals in the U.S. equals 21.3 billion cubic feet per day or 220 billion cubic meters per year (159.6 million tons). In comparison, in 2012 Gazprom plans to export 222 bcm of gas to world markets. In 2011, Gazprom sold 150 bcm to the EU, Turkey, Switzerland, and the Balkan states. Gazprom's tactic on the minimum price concessions to the European customers has not increased the competitiveness of Russian gas. Instead, the volume of its supplies to Europe were significantly reduced. Statistics of gas supplies to the EU vary between Gazprom and the official statistics of the Russian Federal Customs Service, with significant differences emerging after 2009.

Table 1.

Year	**"Gazprom" records on gas sales to foreign countries, bcm**	**Records of Federal Customs Service and Central Bank of Russia on gas exports to Europe, bcm**	**Difference, bcm**
2008	158,8	158,3	0,5
2009	148,3	120,4	27,9
2010	148,1 (138,6)*	107,4	40,7
2011	150,0	117,3	32,7

**in parentheses records of "Gazpromexport"*

The glaring differences can be explained by the fact that Gazprom was actually reselling gas in the European markets while the volume of exports of its own gas declined.

A report of the Skolkovo Moscow Management School's Energy Center, "European gas market: dreams do not always come true," emphasizes that Russia and Gazprom's gas strategy for the EU market, which has worked for nearly half a century, has exhausted itself. Gazprom is losing its position in Europe and will therefore be forced to either reform or continue to lose its market. Russia has been for no more than three years in Gazprom reform and the development of new strategy of EU market activity. Russia's "Gas Wars" against Ukraine and the EU in 2006 and 2009 combined with Gazprom's policy to maximize gas prices make Russian gas less attractive to Europe. Because of these issues Ukraine has a limited perspective on the transit of Russian gas to the EU, the EU does not want to increase purchases of Russian gas, and Russia doesn't want to change its strategy and tactics in European markets. It is possible that Russia, under pressure from adverse trends, will have to reconsider the "South Stream" project. If the project goes forward in a truncated form (for example 31 bcm capacity instead of 63), then Russia will have a "more pipes than gas" scenario and will be able to manipulate directions, volumes, and prices to some extent. The load of gas transportation systems will be unstable and low.

Blue stream is the prototype of all Russian natural gas pipeline routes to the EU in terms of pipeline capacity.

Table 2.

	2006	**2007**	**2008**	**2009**	**2010**	**2011**
Total Gazprom's export to Turkey, bcm	19,9	23,4	23,8	20,0	18,01	25,99
Including:						
By *Blue Stream,* bcm	7,5	9,5	10,1	9,8	8,10	8,14
Share in total export to Turkey, %	*37,7*	*40,6*	*42,4*	*49,0*	*45,0*	*31,3*
Share of pipeline capacity (16 bcm), %	*46,9*	*59,4*	*63,1*	*61,2*	*50,6*	*50,9*
By *Transit via UA-MD-RO-BG*, bcm	12,4	13,9	13,7	10,2	9,91	17,85

Sources: Gazprom and Gazpromexport

http://www.gazprom.ru/about/production/projects/pipelines/blue-stream/

http://gazpromquestions.ru/fileadmin/files/2012/view_version_28.03.2012.pdf

Thus, we can summarize that 2015-2016 will lead to qualitative changes in global and European gas markets. Spot trade, unconventional gas, and LNG can deliver a crushing blow to pipeline monopolist suppliers who ignore the realities of the market. Russian Gazprom, if not reformed, will face the fate of the dinosaurs.

The production of unconventional gas in Eastern Europe can also play a role in the EU gas market. Poland and Ukraine, which have put efforts into the exploration and development of tight gas, shale gas, and coal bed methane, have drawn in leading American and European companies.

Developers of Ukraine's new energy strategy predict that in 2030 the total volume of gas produced in Ukraine will be between 30 and 48 bcm. According to the Energy Strategy project, traditional gas production can reach 15 to 24 bcm by 2030. Tight gas production can reach 7-9 bcm, shale gas 6-11 bcm, and coal bed methane extraction and the utilization of methane from coal mines can reach 4.2 bcm by 2030. This scenario assumes that exports of unconventional gas developed by foreign companies under the PSA terms can start from Ukraine. At the same time, gas imports will be continued, albeit on a small scale.

American company IHS CERA is even more optimistic about the prospects for natural gas production in Ukraine. "Natural gas and Ukraine's energy future," a special study conducted for the Ministry of Energy and Coal Industry, predicts that the volume of total gas production will rise to over 73 bcm in 2030, with IHS CERA consumption at 55-65 bcm. This means that Ukraine can go from a gas importer to a net importer. This scenario is probably over-optimistic, though it may be reasonable if all required conditions are met.

The current decade will also answer the question whether the Black Sea will repeat the fate of the Caspian Sea in 1990's. Intensive exploration work of the Black Sea shelf, continental slope, and seabed have begun over the last 2-3 years in almost all Black Sea countries. The exploration involves leading global companies and hopes to answer whether the marine depths hold any commercially recoverable reserves of natural gas? Various estimates made in different countries at different times give promising forecasts of trillions of cubic meters of natural gas.

The development of unconventional gas reserves in Eastern Europe and offshore gas production in the Black Sea will focus the interest of the EU on the near periphery and on conflict-further located regions of Caspian Sea and Central Asia.

The above mentioned allows to state following conclusions in respect of the European gas market:

- even if the gas niche of EU energy market is increased, it is going to happen in a conservative scenario;
- LNG will be more preferred than piping, which is influenced by political factors;
- The EU will pay more attention to gas projects in geographically closer regions to which it is already connected by pipelines: North (Barents Sea), South (Eastern Mediterranean) and Southeast (Black Sea);
- Competition over pipeline projects, but not all of them will be implemented, and the built ones may have power of their initial phase.

Conclusions:

1. Implementation of the Trans-Caspian project, TANAP, and Nabucco West, to bring East and West Caspian gas to Europe is a good option for the European Union.

2. European Union will not be able to implement the Trans-Caspian project without U.S. support and the neutralization of the Russian and Azerbaijani opposition. Right now odds for the Trans-Caspian project are not high.

3. TANAP's market niche does indeed exist, however, in synergy with Nabucco West. The Trans-Adriatic pipeline will probably compete with Nabucco West during the first stage, as it will attract part of the resources and thus slow its realization.

4. Russia is interested in stopping projects planning to provide additional gas supplies to the EU from non-Russian sources. It is likely that it will try to stimulate frozen conflicts in the South Caucasus and the Caspian Sea to provoke tension and increase political risks for energy extraction and transportation projects.

5. The weakness of European energy policy is the lack of mechanisms to counter Russia's "South Stream," which is does not diversify energy for the EU,

contradicts the principles of the Third Energy Pack, and is lobbied for through corrupt channels in the format of bilateral relations.

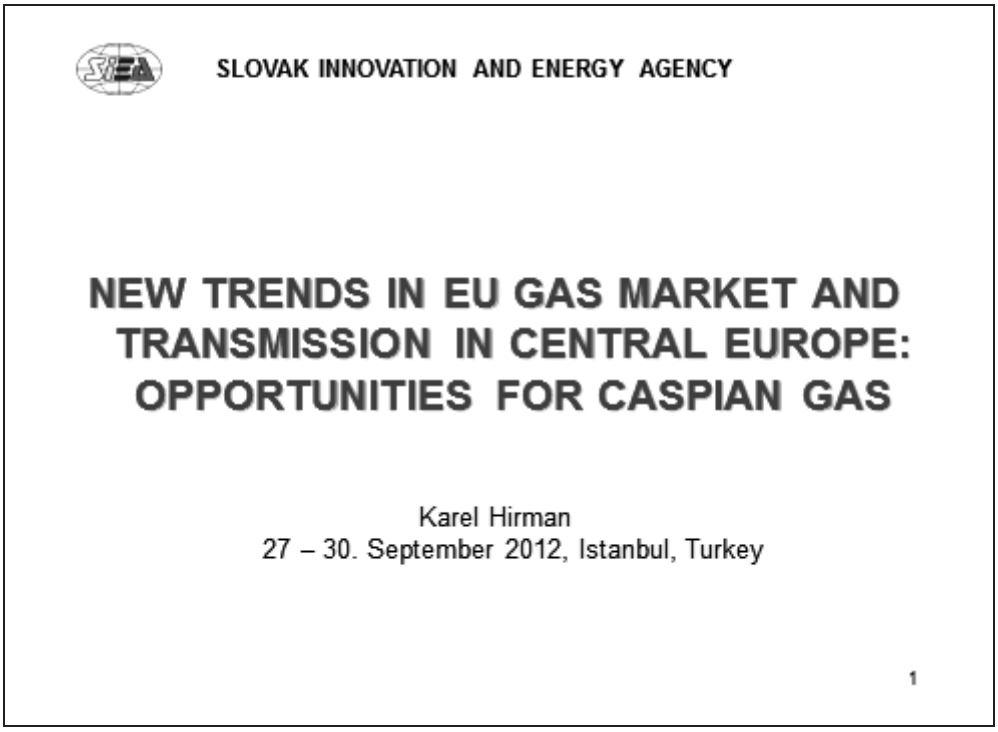
6. The start of LNG export from North America will reduce the probability of a number of pipeline projects being realized.

7. Azerbaijan's uncertainty regarding the liquefaction project and the export of its gas in liquefied form to the Black Sea region (AGRI) confuses its potential customers in Europe.

8. The confirmation of commercial reserves of unconventional gas in Eastern Europe, as well as gas in the Black Sea shelf, an will inhibit the development of pipeline supply projects from more distant regions of Europe.

NEW TRENDS IN EU GAS MARKET AND TRANSMISSION IN CENTRAL EUROPE: OPPORTUNITIES FOR CASPIAN GAS

Karel Hirman
Head of Department for Energy Policies, Slovak Innovation and Energy Agency



SIEA mission

- SIEA carries information service for the Ministry of Economy of Slovak Republic, especially in the development of innovations and energy sector. It gathers, processes and disseminates information related to the increase of energy efficiency, using of renewables, combined heat and power and the development of innovation activities.
- *Outcomes of SIEA work are useful mainly for:*

1. Decision making authorities in the Slovak economy, usage of local energy resources and efficient use of energy;
2. Increase of the skill level of employees in energy sector;
3. Reduction of financial costs for energy consumption for final consumers;
4. Increase of efficiency and competitiveness in the Slovak economy.

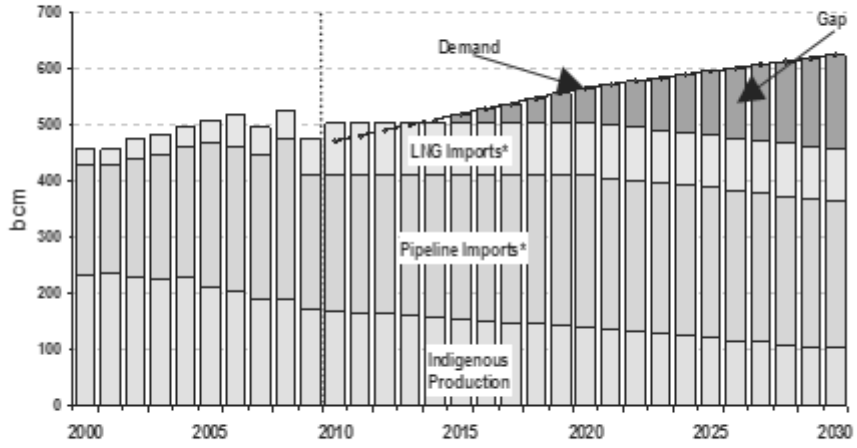
2

SIEA functions in public interest

- ✓ Independent professional authority in energy sector with activities in Slovakia and abroad;
- ✓ Implementing agency for Structural funds of the European Union;
- ✓ Technical expertise authority for state administration in the competence of Ministry of Economy in accordance with the energy legislation, ensuring the preparation and amendments to domestic energy legislation, implementation of EU directives, preparation of the draft of national energy policy, responsible for supporting programs for energy conservation and renewables;
- ✓ Operation of monitoring system for efficiency in energy use.

3

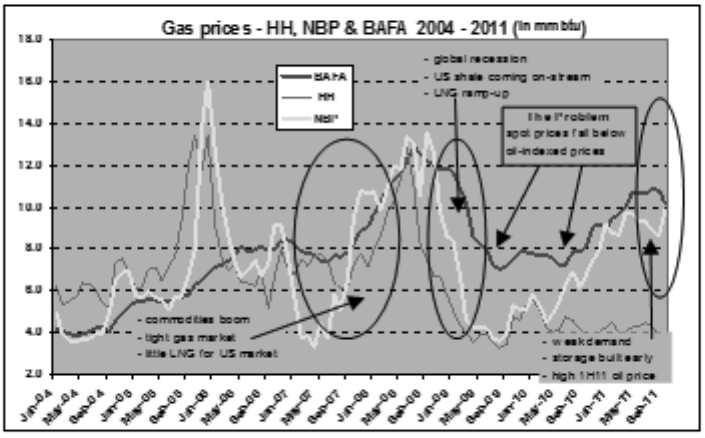
EU 27 supply and demand



* Existing contracts, contract extensions and confirmed new supplies.

4

Gas pricing history in Europe and the USA 2004 – 2011



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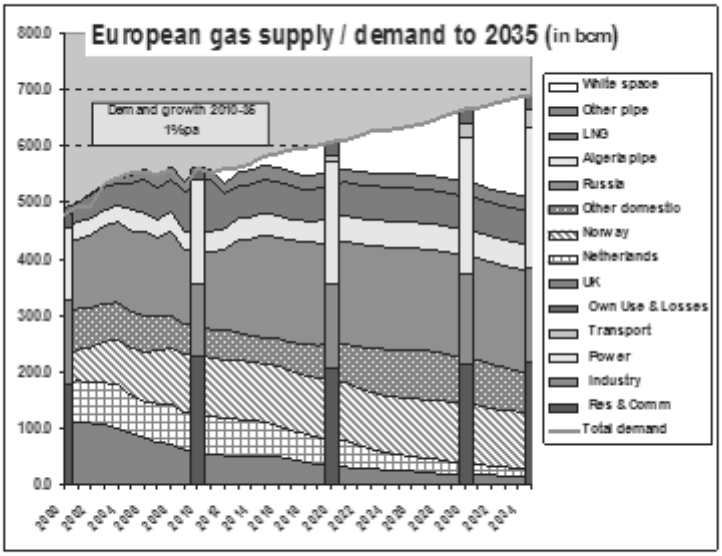
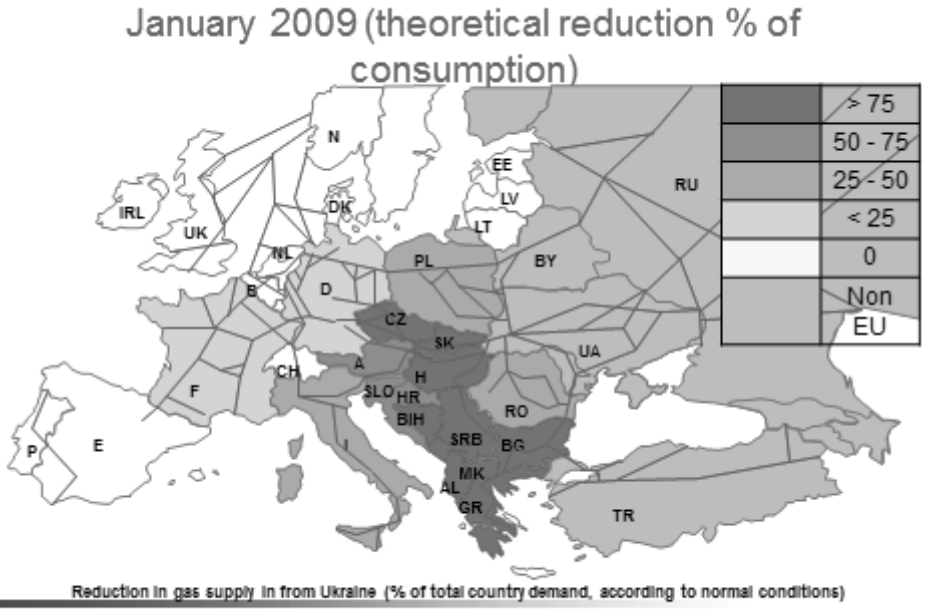
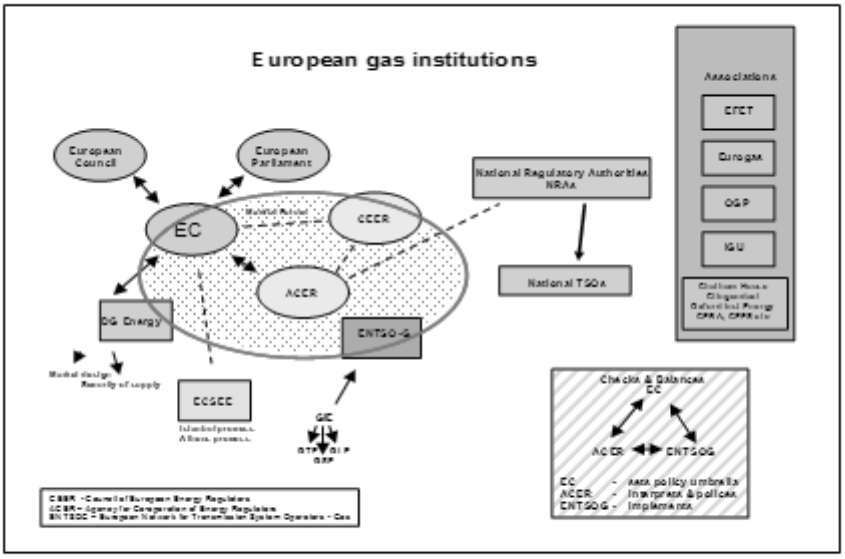

European gas supply / demand to 2035 (in bcm)
Demand growth 2010-35
1%pa
White space
Other pipe
LNG
Algeria pipe
Russia
Other domestic
Norway
Netherlands
UK
Own Use & Losses
Transport
Power
Industry
Res & Comm
Total demand

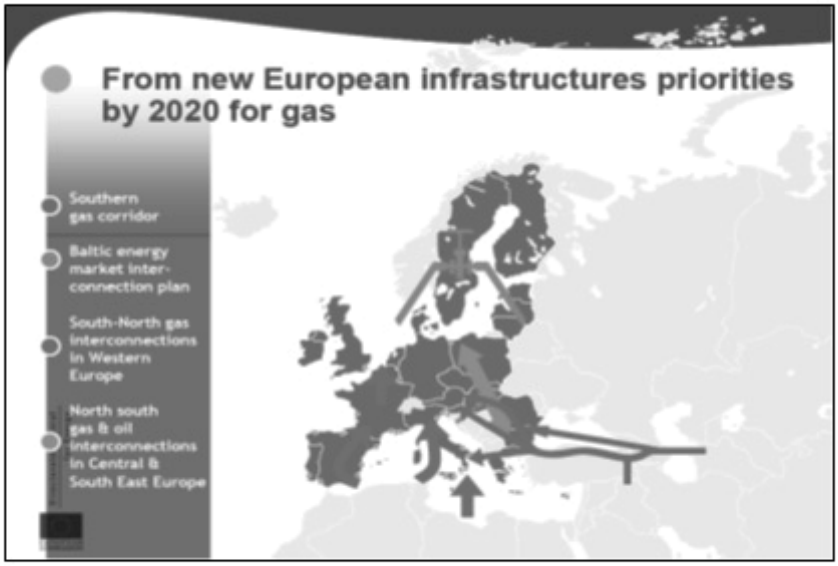
6


January 2009 (theoretical reduction % of consumption)
> 75
50 - 75
25 - 50
< 25
0
Non EU
N
IRL
UK
DK
NL
B
D
EE
LV
LT
RU
PL
BY
CZ
SK
UA
A
H
CH
F
SLO
HR
BIH
RO
SRB
BG
MK
AL
GR
TR
P
E
I
Reduction in gas supply in from Ukraine (% of total country demand, according to normal conditions)

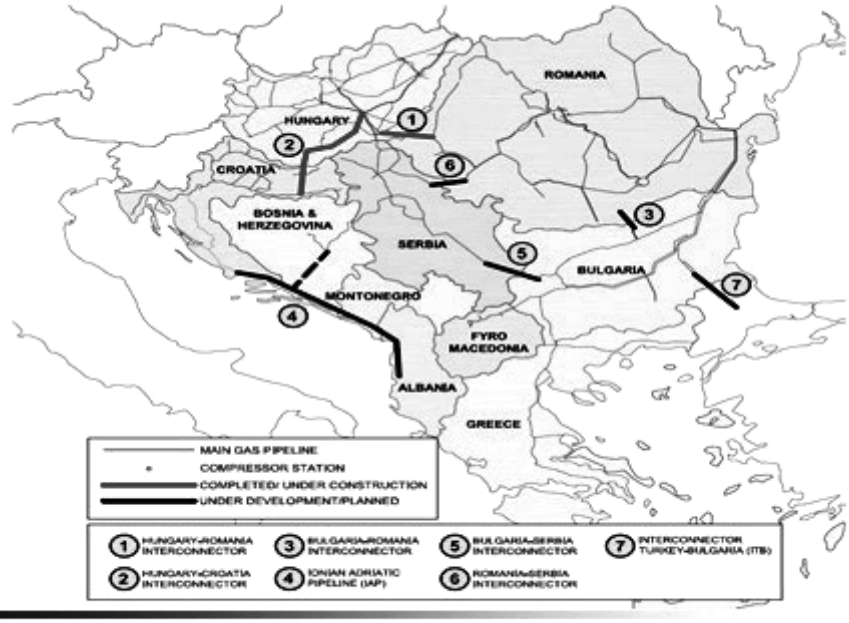
7


European gas institutions
European Council
European Parliament
EC
Council
CEER
ACER
DG Energy
ECSEC
GIC
ENTSO-G
National Regulatory Authorities NRAs
National TSOs
Associations
EFET
Eurogas
OGP
IGU
Chacchia & Balducci
EC
ACER
ENTSOG
EC - Joint policy umbrella
ACER - Interphase & political
ENTSOG - Implementation

8

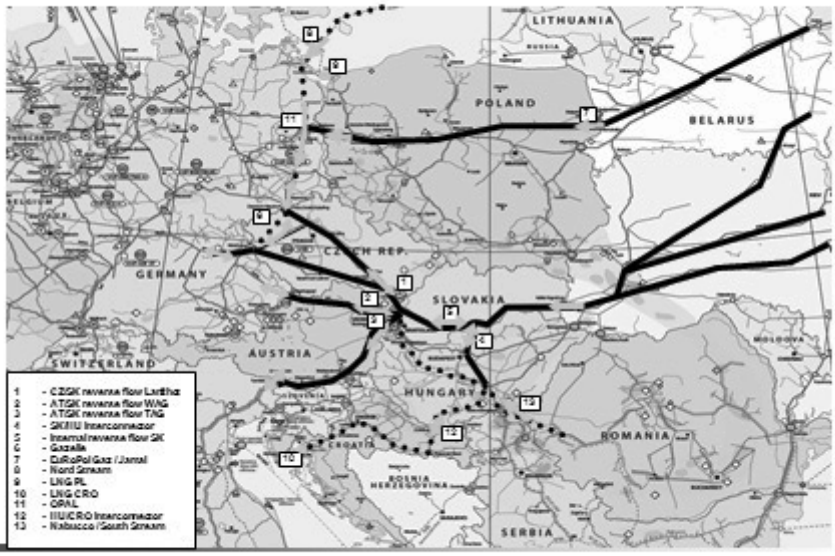

From new European infrastructures priorities by 2020 for gas
Southern gas corridor
Baltic energy market inter-connection plan
South-North gas interconnections in Western Europe
North south gas & oil interconnections in Central & South East Europe

9



10

Back-up: Main Gas Corridors in Central Europe



11

The North-South Gas Corridor

- discussion triggered i.a. by 2009 gas crisis
- strong political support by V4+ initiative (six countries directly involved)
- 2,300 km of pipelines (+upgrade of existing lines)
- 900,000 t of steel
- investment approx 3,800 MEUR
- financing under EU programmes: 220 MEUR
- access to two LNG terminals (Świnoujście, Krk)
- access to Southern Gas Corridor → **gas supply from Caspian regions to Europe**

Realistic concept for enhancing market liquidity and security of supplies!

12

North-South Gas Corridor

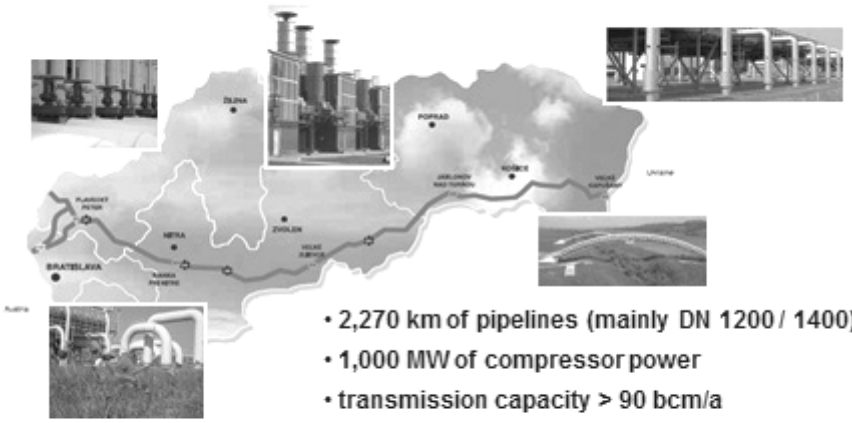
43 projects overall:

- **New pipelines constructions**
- **Upgrade of existing pipelines**
- **LNG, CNG terminals**
- **Storages**

Rank	Project
1	SK-HU
2	ITB
3	PL-SK
4	Baltic pipe
5	PL LNG
6	IGB
...	...

13

Slovak Gas Transmission: Facts & Figures



- 2,270 km of pipelines (mainly DN 1200 / 1400)
- 1,000 MW of compressor power
- transmission capacity > 90 bcm/a
- network access fully regulated
- currently about 30 shippers and 55 contracts

14

About 75% of today's gas flow from Russia to Western Europe is passing through Slovakia

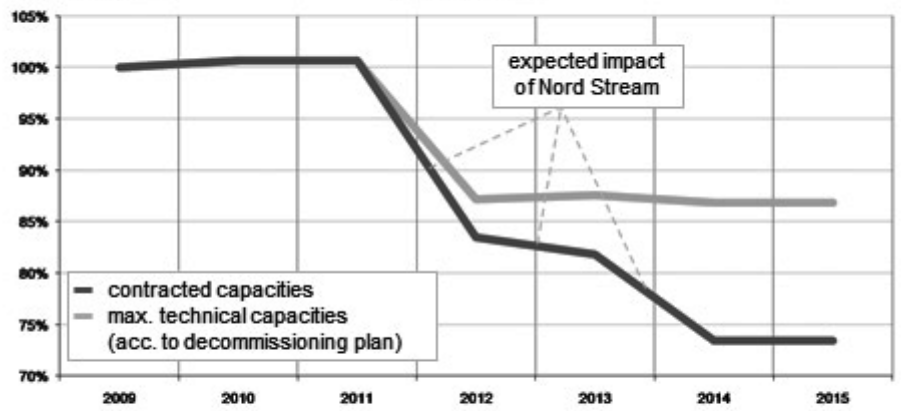
Existing	
Eustream	90 bcm/a
EuRoPol Gaz	33 bcm/a
New	
Nord Stream	2 x 27.5 bcm/a
South Stream	30-60 bcm/a
Nabucco	31 bcm/a

New projects can easily double existing pipeline capacities!

New challenges due to increasing pipe-to-pipe competition!

15

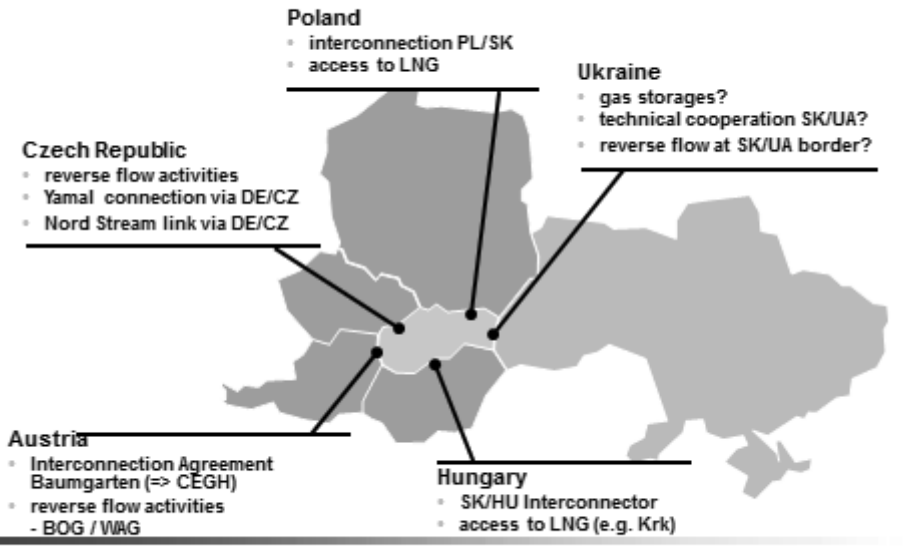
Development of Transmission Capacities in Slovakia



How reasonable are new routes if they lead to stranded investment elsewhere?

16

Our Vision: A Central European "Gas Turntable"



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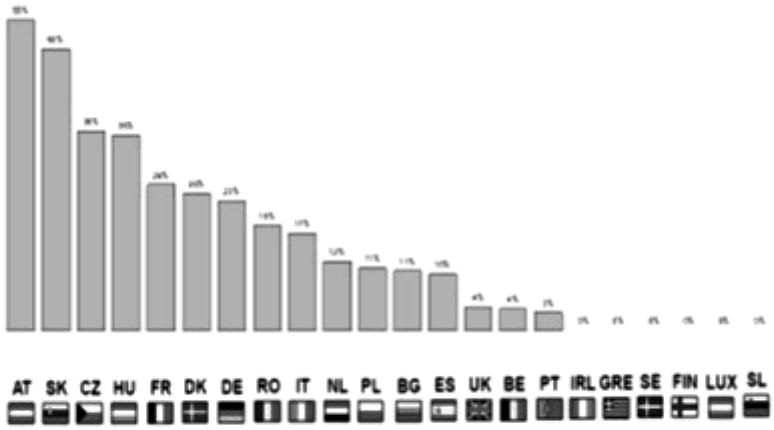
Share of Storages in relation to the gas consumption (in %)



Source: Eurogas, Gas Storage Europe, GIE

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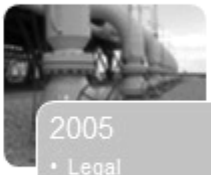
Regulations

1998
- Third party access
- market opening



2005
- Legal unbundling
- Transparency

2009
- Full unbundling
- ACER
- ENTSOG

- **Third package is now implemented in Slovakia;**
- **By the middle of August 2012 approved by Government, Parliament and signed by President;**
- **Unbundling: Government approves the proper model (OU ‹ › ITO);**
- **Deadlines extremely challenging;**
- **Gas market rules more flexible.**

19

Regulated tariffs in Slovakia

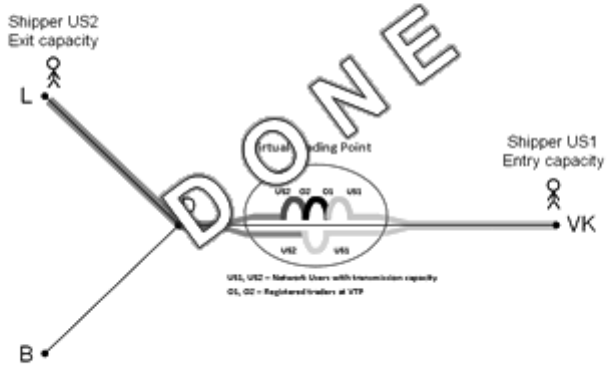
- tariffs fully consistent and integrated into the valid entry/exit tariff system
- the new entry/exit point Veľké Zlievce can be combined with any other entry/exit point(s) of the Eustream network
- ITO/OU model is prepared for adoption

20

New products: Virtual Trading Platform

Virtual trading point is a complement to CEGH:

- it allows exchange of title within the transmission network
- it enhances liquidity and trading
- it brings additional source of revenues

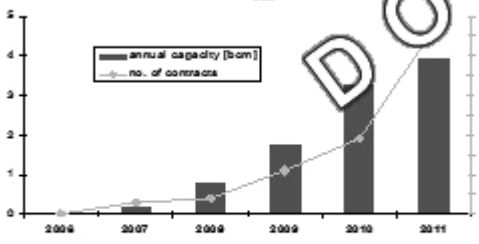


Implemented as 01.01.2012

21

New products: Short-term / Short-haul products

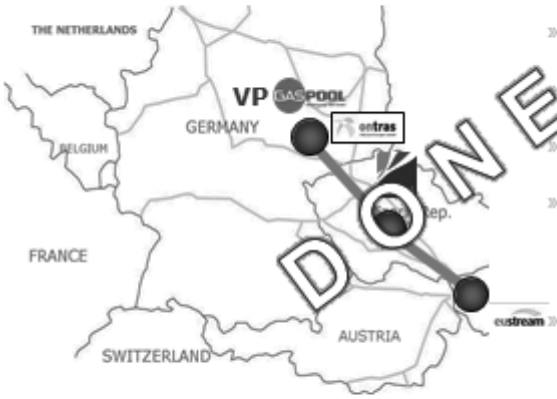
DONE



- increasing no. of hub related transactions in SK (e.g. arbitrage NCG/CEGH)
- sufficient transmission capacities available in Slovakia in the long run (no investment need)

New products: TSO Cooperation - GATRAC

Cross border VP2VP products – overview

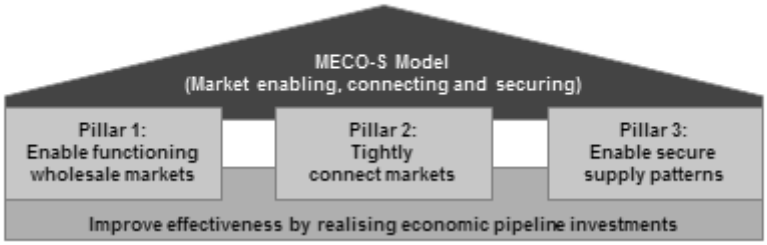


DONE

- direct connection between respective VPs
- bundled products with one single contract (similar "train tickets")
- bookable with each participating TSO on FCFS-principle
- first product:
  - firm daily capacity
  - bookable one to more days ahead*
- no re-nomination

Currently at the Integration Phase
Expected Go Live – 1.7.2012

Eustream participating on Gas Target Model



Goal:

Internal EU gas market

Way to it:

-enable functioning wholesale markets ("markets"), where they do not exist yet;

-connect these markets better to move forward to an integrated market;

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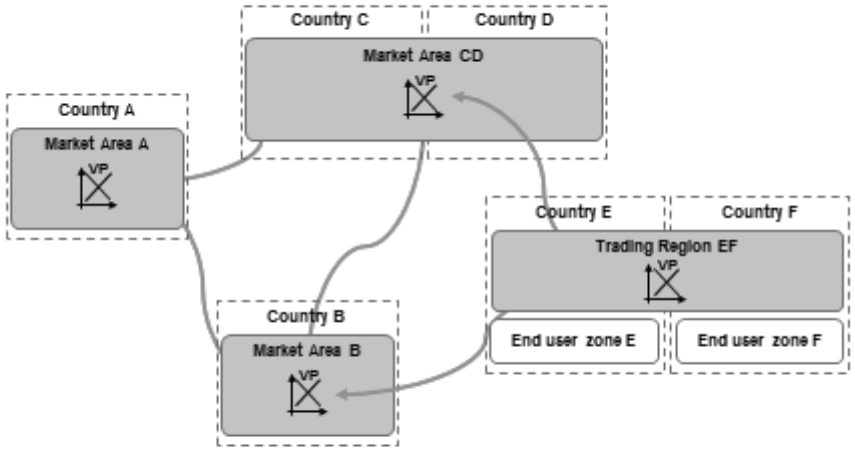
Eustream participating on Gas Target Model



Legend and Symbols

Hub to Hub capacity product and potentially market coupling

Virtual point.

Source: Walter Boltz, Enabling Gas Markets, 3rd Gas Target Model Workshop 2011

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Contact

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Slovak Innovation and Energy Agency
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karel.hirman@siea.gov.sk
www.siea.sk

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Thanks for your attention!

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ANNEX 1

Conference Agenda

The Conference

Trans-Anatolian gas pipeline: Challenges and Prospects for the Black Sea countries and the Balkans

AGENDA

With support of
Black Sea Trust for Regional Cooperation
(project of German Marshall Fund),
Revenue Watch Institute (RWI),
State Oil Company of Azerbaijan Republic (SOCAR)

September 28-29, Istanbul. Black Bird Hotel

First day: September 28

08.30 – 09.00	**Registration**
09.00 – 09.20	**Opening.** - *Sabit Bagirov, Entrepreneurship Development Foundation* **Welcome address:** - *Mehriban Rahimli, Black Sea Trust for Regional Cooperation (project of German Marshall Fund)* - *Kakha Gogolashvili, Director of EU Studies, Georgian Foundation for Strategic and International Studies*
09.20 – 11.00	**Panel 1:** TANAP: prospects for solving the problems of energy security. **Chairman:** *Sinan Ogan, Member of Parliament, Turkey* **Speakers:** - *Necdet Pamir, Board Member, World Energy Council, Turkish National Committee, Turkey;* - *Mikhail Korchemkin, Director of East European Gas Analysis, USA;* - *Ilham Shaban, Director of Oil Study Center, Azerbaijan;* - *Teymur Huseynov, Head of Global Energy Consulting at Exclusive Analysis, UK* - *Kenan Yavuz, President of SOCAR- Turkey;* **Q & A**
11.00 – 11.30	**Coffee, Tea**

11.30 – 13.00	**Panel 2:** Political challenges for the region. **Chairman:** *Mattew Brysa, Ambassador, USA/ Sabit Bagirov* **Speakers:** - *Rasim Musabayov, Member of Parliament, Azerbaijan;* - *Sinan Ogan, Member of Parliament, Turkey;* - *Marek Dabrowski, Center for Social and Economic Research, Poland;* **Q & A**
13.00 – 14.00	**Lunch**
14.00 – 15.00	**Continuation of Panel 2** **Chairman:** *Rasim Musabayov, Member of Parliament, Azerbaijan* **Speakers:** - *Kakha Gogolashvili, Director of EU Studies, Foundation for Strategic and International Studies, Georgia;* - *Burcu Gultekin Punsmann, Senior Foreign Policy Analyst, TEPAV, Economic Policy Research Foundation, Turkey;* - *Ilgar Mammadov, Director, Baku Political Studies School, Azerbaijan;* **Q & A**
15.00 – 15.15	**Short break**
15.15 – 16.30	**Panel 3:** TANAP and other projects of the Southern Energy Corridor. **Chairman:** *Necdet Pamir, Board Member, World Energy Council, Turkish National Committee* **Speakers:** - *Nana Pirtskhelani, Senior Adviser to the Minister, Ministry of Energy and Natural Resources, Georgia;* - *Mete Goknel, Former president of BOTAS, Turkey;* - *George Vashakmadze, Director, Corporate Strategy White Stream Consortium, Georigia;* **Q & A**

16.30 – 17.00	**Coffee, Tea**
17.00 – 18.00	**Continuation of Panel 3** **Panel 3:** TANAP and other projects of the Southern Energy Corridor. **Chairman:** *Necdet Pamir, Board Member, World Energy Council, Turkish National Committee* **Speakers:** - *Liana Jervalidze, Research Fellow, the International School of Caucasus Studies, Ilia University, Georgia;* - *Aleksander Krylov, Lead researcher of the World Economy Institute of Russian Academy of Sciences, President of the Scientific Society of Specialists on Caucasia, Russia;* **Q & A**
19.00 – 22.00	**Bosphorus Dinner Cruise**

Second day: September 29

09.00 – 10.00	**Panel 4:** TANAP: Trans-Caspian pipeline prospects. **Chairman:** *Mikhail Korchemkin, Director of East European Gas Analysis, USA* **Speakers:** - *Nasib Nasibli, former Member of Parliament;* - *Georgy Kovalev, Executive director, Institute of the Caspian Cooperation, Russia;* - *Natig Jafarov, Baku Political Studies Center, Azerbaijan;* **Q & A**
10.00 – 10.15	**Short break**

10.15 – 11.15	**Panel 5:** Prospects for the development of gas markets in Black Sea Basin. **Chairman:** *Alexandr Krylov, Lead researcher of the World Economy Institute of Russian Academy of Sciences, President of the Scientific Society of Specialists on Caucasia, Russia* **Speakers:** - *Sevak Sarukhanyan, Deputy Director, Noravank Foundation, Armenia;* - *Ruslan Stefanov, Center for the Study of Democracy, Bulgaria;* - *Radu Arghir, CPCEW, Romania;* - *Chingiz Mammadov, Senior Programme Advisor, United Nations Development Programme;* **Q & A**
11.15 – 11.45	**Coffee, Tea**
11.45 – 13.15	**Panel 6:** Hydrocarbon transit revenue transparency in Georgia, Bulgaria, Turkey and Ukraine. **Chairman:** *Emil Omarov, Revenue Watch Institute* **Speakers:** - *Ruslan Stefanov, Center for the Study of Democracy, Bulgaria;* - *Oyku Uluchay, independent expert;* - *Irina Lashkhi, Georgia Soros Foundation;* - *Mikhail Gonchar, Director on Energy Programs at The NOMOS Centre;* **Q & A**
13.15 – 14.15	**Lunch**

14.15 – 15.15	**Panel 7:** Prospects for the EU gas market. **Chairman:** *Mete Goknel, Former president of BOTAS, Turkey* **Speakers:** - *Mattew Brysa, Ambassador, USA;* - *Mikhail Gonchar, Director on Energy Programs at The NOMOS Centre;* - *Karel Hirman, Haed of the Department for Energy Policies, Slovak Innovation and Energy Agency;* **Q & A**
15.15 – 15.45	**Coffee, Tea**
15.45 – 16.30	**General Discussions** **Closing remarks** *Sabit Bağırov*
20.00 – 22.00	**Dinner in Hotel Black Bird**

The Conference

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Challenges and Prospects for the Black Sea countries and the Balkans

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Istanbul

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