

European Interstate Initiatives before and after Resolution of Nuclear Issue

Peyman Kavianifar- M.A of Regional Studies, Tehran University, Tehran, Iran

Bahareh Sazmand*- Associate Professor of Regional Studies, Tehran University, Tehran, Iran

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Abstract

International Transport Corridors and Interstate Pipelines are important sources of conflict and competition between major powers. From a Realistic point of view, they are not only economic Initiatives but also can be used as a political leverage for countries en route. So each major power has proposed its own preferred corridor. EU's TRACECA Initiative and Southern Gas Corridor, United State's New Silk Road and its support for pipelines like BTE, TCP, TAPI etc, Chinese OBOR Initiative and Russia's support for International North-South Corridor-INSC and various pipeline projects are obviously in line with this Realistic Approach. I.R. Iran due to its geopolitical situation potentially faces different choices, so it is important to exactly survey this initiatives and obstacles facing. After offering a very exact and comprehensive description of European supported Interstate Initiatives in Caspian Sea and Black sea, this article will evaluate the consequences of the resolution of nuclear issue between I. R. Iran and the West and continuation of Development Oriented Foreign Policy in terms of reducing obstacles facing these initiatives. The hypothesis is that the resolution of nuclear issue, termination of sanctions and continuation of development oriented Foreign Policy will considerably ease the obstacles that development of Southern Gas Corridor-SGC facing, but will not overshadow TRACECA's status.

Keywords: EU, Iran, Sanctions, TRACECA, Southern Gas Corridor.

* E-mail: bsazmand@ut.ac.ir

Introduction

After fall of the socialist governments in Eastern Europe and dissolution of the Soviet Union, EU found these two Spaces as sources of future threats and opportunities. With emergence of this new complexes and political spaces, EU inaugurated several bilateral and multilateral Initiatives and Programs toward Eastern Europe and Post-Soviet Space. Technical Assistance to the Commonwealth of Independent States-TACIS Program, European Commission's Humanitarian Aid and Civil Protection department-ECHO Program, Interstate Oil and Gas Transportation to Europe-INOATE Program, Transport Corridor Europe-Caucasus-Asia-TRACECA Program, Southern Gas Corridor Initiative etc designed to have a role in Post-Soviet Space and beyond.

We can consider TRACECA and Southern Gas Corridor-SGC as flagships of European Interstate Projects. Within TRACECA Program, European Railway Networks will connect to china via multimodal transportation corridors that bypass Russian soil. Moreover, Southern Gas Corridor-SGC is fourth major gas corridor that will bring Middle East and Caspian Sea Gas Resources to Europe.

Offering a very exact and comprehensive description of European supported Interstate Programs and Projects is one of main purposes of this article because of their direct impact on I.R. Iran's national interests. The main question of this article is that what will be impact of resolution of nuclear issue between I.R. Iran and the West and continuation of Development Oriented Foreign Policy in terms of reducing obstacles facing these initiatives. The hypothesis is that resolution of nuclear issue and continuation of development oriented Foreign Policy will considerably ease the obstacles facing the development of Southern Gas Corridor-SGC but will not overshadow TRACECA's status.

Transport Corridor Europe-Caucasus-Asia – TRACECA

The Ancient Silk Road connected China with Western Europe, with few interruptions, for nearly two millennia. The road, which is about 5,000 miles long (more than 7,500 kilometers), started somewhere in what is now central and northern China. One of the routes passed through China's western provinces, crossed the Tian Shan and Pamir mountains, and continued through Khotan, Yarkent, Balkh, Zemm, and Merv (the territories of present-day Uzbekistan, Turkmenistan, and Afghanistan). The other route went through Turfan, Kashgar, Samarkand, Bukhara, Amul, and Merv. Then it continued to the eastern Mediterranean Sea and to Byzantium or Rome. From time to time, the route would change due to political turbulence, military campaigns, or climatic changes. In the late medieval era, the major cities on the road also served the trade between India and Persia and the rising eastern European states, including Russia. Merchants carried wool, karakul (astrakhan fur), gold, silver, and weaponry to the East and brought carpets, silk, opium, spices, and luxury goods to the West. The importance of the Great Silk Road is difficult to overstate. It contributed to cultural and scholarly exchanges between people of the East and the West, and many people received their education and enriched their knowledge of geography, algebra, astronomy, medicine, and many other subjects by studying at the numerous centers of academic learning in the ancient and medieval cities on the Great Silk Road. The road also contributed immensely to the wealth of Central Asian cities on the trade route, including Bukhara, Khiva, Merv, and Samarkand. However, it had practically disappeared by the seventeenth and eighteenth centuries with the rise of cheaper maritime routes from Europe to India and China, and due to political instability in Central Asia (Abazov, 2007, pp. 21- 22).

A modern interpretation of the Silk Road covers an exchange of technological achievements, a dialogue among and the mutual enrichment of various cultures, an area of co-operation and co-existence among different

civilizations, a common market and, perhaps, a system of collective security. In other words, the Silk Road is a multifaceted system of spatiotemporal relationship among nations, states and civilizations, which is the result of an evolutionary process of a co-operation on the enormous Eurasian landmass. Therefore, we believe it would be correct to talk of building a New Silk Road instead of the restoration of the Old, Historic or Great Silk Road (sam.gov.tr¹).

The idea of reviving east-west trade on the Silk Road was firstly raised by the minister of foreign affairs for the USSR, Eduard Shevardnadze in September 1990 at the Vladivostok international conference. This idea found widespread acclaim (Gorshkof, Bagaturia, 2001, pp. 51-52). For the first time, TRACECA Program was initiated at the Conference in Brussels, in May 1993, involving Ministries of Trade and Transport from 8 countries: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Members of this Conference adopted Brussels Declaration, to give rise to implementation of the interregional program of technical assistance “TRACECA”, financed from the European Union and aimed at the development of the transport corridor from Europe, crossing the Black Sea, Caucasus, the Caspian Sea and reaching the Central Asian countries. In the period of 1996-1998 Ukraine, Mongolia and Moldova joined the Program. At the First Annual Meeting of IGC² TRACECA in Tbilisi, March 2000, Bulgaria, Romania and Turkey officially applied to the European Commission with a request to join TRACECA Program and as a result have become members of the Basic Multilateral Agreement of the international transport on development of the Europe-Caucasus-Asia corridor (MLA). In July 2009, the Islamic Republic of Iran accessed to the MLA TRACECA, and on the outcomes of the Seventh meeting of the IGC TRACECA, 16 June 2009 the status of observer in the

1- <http://sam.gov.tr/wp-content/uploads/02/2012/ArchilGegeshidze.pdf>

2-Intergovernmental Commission (IGC)

IGC was granted to the Republic of Lithuania (traceca-org.org¹). However, TRACECA is the only one fragment of a much bigger - one could even say gigantic – project, which is frequently called the “Silk Road Revival Project”. TRACECA is a large- scale project supporting political and economic independence of the former Soviet republics by enhancing their capacity to access European and world markets through alternative transport routes, encouraging regional co-operation and investment climate and linking TRACECA route with the (TENs²) (Dekanozishvili, 2004, p.14).

1- <http://www.traceca-org.org/en/traceca/history-of-traceca/>

2-The **Trans-European Networks (TEN)** were created by the European Union by Articles 154-156 of the Treaty of Rome (1957), with the stated goals of the creation of an internal market and the reinforcement of economic and social cohesion. To various supporters of this policy, it made little sense to talk of a big EU market, with freedom of movement within it for goods, persons and services, unless the various regions and national networks making up that market were properly linked by modern and efficient infrastructure. The construction of Trans-European Networks was also seen as an important element for economic growth and the creation of employment.



TRACECA map- www.traceca.org.tr

In June 2009, in Cholpon-Ata (Kyrgyzstan), Azerbaijan with four other TRACECA member states (Armenia, Georgia, Kyrgyzstan, and Tajikistan) signed an additional agreement on the “Development of Multimodal Transport \square TRACECA”. It was ratified by Azerbaijan on March 4, 2011. This is an important agreement, as the TRACECA route, particularly its Azerbaijanis section, involves intermodal transportation by road/rail and sea. Effective coordination between the countries of the Black Sea and the Caspian Sea region, and between the different modes of transportation, is crucial to developing TRACECA into a fast, cost \square effective, and reliable multimodal transport corridor. This agreement is the first step in this direction (Ziadov, 2011:30).

Multimodal transit

TRACECA which is called as the historical Silk Road is a multi-mode transportation corridor project developed by the European Union. TRACECA is not only a regional program. It developed in order to integrate the continents of Europe and Asia by connecting them to each other via Black sea and Caucasus. The corridor within the scope of the current project has been serving road, sea and rail transport and additionally combined transport (Yildirim Keser, 2014:171).

Truck Transit via TRACECA

Truck transit is the most commonly used mode of cargo transportation in TRACECA. Currently, however, most of this cargo is carried by Turkish trucking companies, and they experience countless delays and difficulties along the Azerbaijani section of TRACECA route. In 2010, the total number of Turkish trucks increased to 41,099, but 98% bypassed Azerbaijan, using the Russian or Iranian routes instead (Ziadov, 201: 33). Turkish trucks use three different routes when traveling to Central Asia:

Turkey => Samsun-(ferry to) =>Russia =>Kazakhstan =>Kyrgyzstan (Option 1)

Turkey =>Georgia =>Azerbaijan-(ferry to) =>Kazakhstan=>Kyrgyzstan (Option 2)

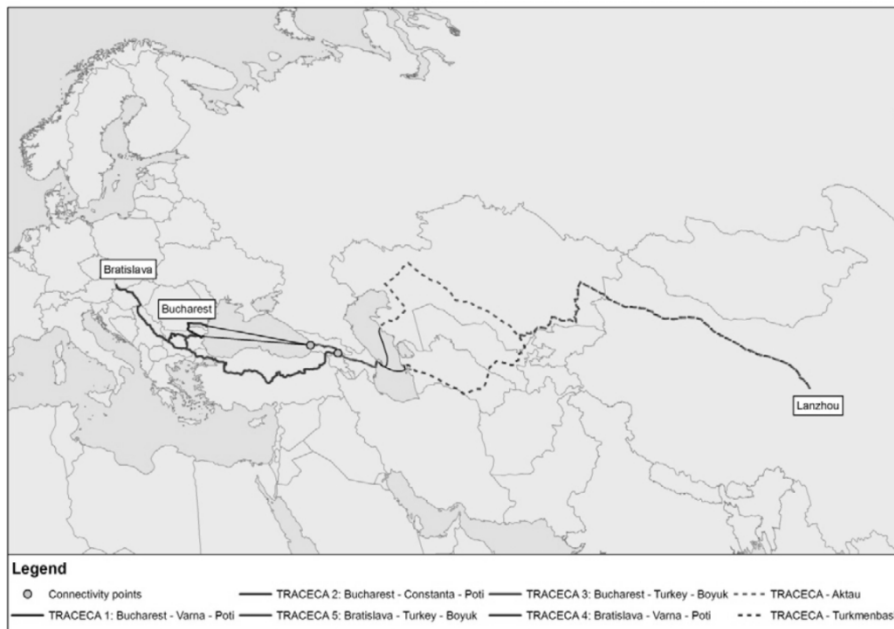
Turkey => Iran => Central Asia (Option 3)

It takes approximately 10 days for a Turkish truck to reach Bishkek using either the Russian (Option 1) or Iranian (Option 3) routes. Yet it takes 14-20 days for a truck to reach Bishkek along the TRACECA route via Baku (Option 2) (Ziadov, 2011:33-34).

TRACECA's main competition for Turkish truck traffic comes from the northern route via Russia and the southern route via Iran. The route via Iran is disadvantaged by increased fuel prices and the longer distance involved, while the Russian route only seems attractive if the cargo is being shipped to Kazakhstan. Nonetheless, these are currently the preferred routes for Turkish truckers for trips to Central Asia or Afghanistan (Ziadov, 2011:39).

Rail Transit via TRACECA

The second major mode of transportation along TRACECA is rail transport. There are two TRACECA rail routes in the Georgian sector of the Corridor linking via Black sea Europe to the Caucasus, Central Asia and finally China: the Baku-Tbilisi-Batumi rail link, and the Baku-Tbilisi-Poti rail link. The rail connection between Azerbaijan and Armenia, which had an extension to Turkey, no longer exists, and the line between Armenia and Turkey is outdated and non-functioning. The Baku-Tbilisi-Batumi/Poti railway is connected to the European rail networks via the Black Sea rail ferry service in the West (i.e. Romania, Bulgaria and Ukraine), and the Kazakh and Turkmen rail networks to the East. It is envisaged that the proposed Kars-Akhalkalaki railway will link Georgia and Turkey, and the TRACECA rail network will extend overland to South East Europe via Turkey. It will also have access to Turkish ports in the Mediterranean Sea(Ziadov, 2011:40).



TRACECA envisaged routs-source: Islam, Zunder, Jackson, 2013

In practice the integrated TRACECA railway corridor does not exist. At present infrastructure improvement initiatives are carried out on a national level. Two alternative TRACECA corridor routes were studied that provide the connection between Southern Europe and China:

- The TRACECA – Turkmenbashi route, which goes from Poti(or batumi) in Georgia, Azerbaijan, Turkmenistan and Uzbekistan and to Dostyk in Kazakhstan;
- The TRACECA-Aktau route, which goes from Poti (or Batumi) in Georgia, Azerbaijan, the Aktau port in Kazakhstan and then further through Kazakhstan to the Dostyk border crossing with China.

The TRACECA – Turkmenbashi and TRACECA – Aktau routes follow the same railway segments from Poti to Baku and from Arys to Dostyk and further to China. They vary in their central section, with the TRACECA – Aktau route following only through the territory of Kazakhstan (Islam, Zunder, Jackson, 2013, p.51).

Technical characteristics: Half of its length of railways is double track. Some sections of the railway line currently bear traffic near to maximum capacity. Almost all the lines have a semi-automatic blocking system which does not allow more than one train between two stations. The maximum train mass differs between 2,500t to 3,000t on the different sections. The Azerbaijani section of the railway up until Baku is a double track line with the exception of one bridge with a single track in Powlu which reduces the capacity of the entire line. There are a lot of ongoing initiatives and projects for the modernization and rehabilitation of the railway infrastructure within the TRACECA region. The majority of these projects have a national character. Some are aimed at creating new railway lines and some are focused on the upgrade of the existing infrastructure (Islam, Zunder, Jackson, 2013, p. 53).

Theoretically spare freight train capacity exists. However in reality the port of Aktau is already highly congested with wagons waiting to be

discharged. Also critical is the capacity at border crossings between Kazakhstan and China. There is high risk of damage to and theft of cargo, which affects the shipper's decision to transport their cargoes. There is no unified tracking and tracing system (Islam, Zunder, Jackson, 2013, p.54).

Two alternative TRACECA routes were studied that provide connection between Southern Europe and China. The maximum freight train speed varies on average from 60 – 80 km/h. On some sections of the TRACECA – Turkmenbashi route, the train speed is limited to 20 - 40 km/h due to the infrastructure condition. The average train speed along both corridors is 40 km/h. Both routes of TRACECA corridor have comparable infrastructure conditions, only half of the distance is double track and both have electrified and non-electrified sections. Thus the capacity of the routes is considerably limited by single track and the general condition of infrastructure and rolling stock. There are however international initiatives to promote the development of the railway and road infrastructure in the region. For example, considerable railway infrastructure improvements are expected in Georgia, Azerbaijan and Kazakhstan. The operating system of the railway transport is the same and there are no shipment compatibility problems along the corridors. In the majority of cases bottlenecks may occur, but are not due to the limited capacity of infrastructure but due to the mismanagement or mis-operation, e.g. the congestion in the Baku and Aktau ports. Therefore, the potential exists to open additional rail services. At the same time the route does not meet major supply chain requirements, e.g. the transit time is unreliable, market price is hard to assess and is not transparent and the risk of damages and thefts is very high. The low speed also increases cost and time. In addition, the container transport/block trains are intermingled with general freight and passenger transport. The estimated travelling times for the block trains on the route from 21 days for the Turkmenbashi route and 24 days for the Aktau route. The conditions of the pick and delivery service and transshipment operations remain unclear and

have a low reliability (Islam, Zunder, Jackson, 2013, pp.55-56).

Baku-Tbilisi-Kars railway: nonetheless there is an important envisaged rail route within TRACECA crosses turkey's soil (Hamed, Bozhydarnik, Gasukha, 2014). TRACECA corridor has two routes. One travels through Turkey and another route through Black Sea – Georgian ports to the central Asian countries (Hamed, Bozhydarnik, Gasukha, 2014). The idea of connecting the rail networks of Azerbaijan, Georgia and Turkey was first discussed during the Joint Transport Commission meeting in July 1993. The initiative was later integrated into the Master Plan on the Trans-European Railway (TER) networks sponsored by the United Nations Economic Commission for Europe (UNECE). In July 2002, the Ministers of Transport of Azerbaijan, Georgia and Turkey signed a protocol confirming the route and at a February 28, 2005 meeting the parties agreed to conduct a feasibility study. UNECE listed this route among Priority projects that could be funded and implemented rapidly by 2010. The realization of this project depends on the construction of a 98 km-long (60 miles) segment of rail from Kars in Turkey to Akhalkalaki in Georgia (68 kilometers in Turkey, 30 kilometers in Georgia, and the rehabilitation of the Akhalkalaki-Tbilisi line). The estimated cost of the project is about \$400 million. Today, there are two operational railroads in the South Caucasus, which are part of the EU-sponsored TRACECA initiative that links Azerbaijan's and Georgia's transportation networks. These are the Baku-Tbilisi-Poti and the Baku-Tbilisi-Batumi railways. There is, however, no rail link between Georgia and Turkey. The construction of the Kars-Akhalkalaki railroad will connect Georgian and Turkish railroads and facilitate trade in the East-West direction. For example, a cargo from China could be delivered to Aktau (Kazakhstan) and then transported by railway ferries to Baku and shipped directly to Istanbul and onward to Europe via the Baku-Tbilisi-Akhalkalaki-Kars-Istanbul rail system. Likewise, a shipment from Europe could be easily transported to the South Caucasus, Central Asia or China. Hence, Kars-

Akhalkalaki serves as a rail connection that will eventually unite railway networks of China-Central Asia-South Caucasus-Turkey and the European Union. The governments of Azerbaijan, Georgia and Kazakhstan have already made some progress in expanding the current TRACECA routes to Central Asia, which will be extended to China. In December, 2005, a container truck from Kazakhstan was sent to Georgia via Azerbaijan as a part of a pilot program. A 3,850-km (2406 miles) long Kazakh rail system from Aktau near the Caspian Sea to the city of Dostlik (Druzhba) near the Kazakh-Chinese border is currently operational. The length of the Baku-Tbilisi-Akhalkalaki-Kars and the Kars-Istanbul sections are 826 km (516 miles) and 1,933 km (1208) respectively (The Central Asia- Caucasus ANALYST).

Azerbaijan will get the biggest benefit of this line. Oil products exporter Azerbaijan will directly connect to oil products importer Turkey by rail. The route is made up of two different railway gauges: Broad gauge (1520mm) from Baku to Akhalkalaki and standard gauge (1435mm) from Akhalkalaki to Kars. The break-of-gauge will be at Akhalkalaki and therefore a bogie exchange station will be built there. That will enable CIS wagons to move in Turkey. Although freight is on focus in this project, there is a great expectation about passenger traffic as well. One million passenger is expected to use this line annually at the beginning, In long term, ridership is expected to reach to 3 millions/year. Since current traffic via Iran is facing with long delays in Van Lake and Saraks, opening of this line may cause a shift to railway. The line is expected to have a annual volume of 6.5 million to at the beginning. Target is 17 million to/year in long term. The Baku-Tbilisi-Kars line will end up with strengthening economic relations between Azerbaijan, Georgia and Turkey. Reopening of Kars-Gyumri-Tbilisi line via Armenia will be almost unnecessary which will strength isolation of Armenia. Azerbaijan will have voice in Turkey-CIS countries traffic. Kazakhstan will be able to enrich its transit traffic from China which is one

of the main targets of Kazakhstan Railways. Iran will face with rapid decrease in transit loads from Turkey to CIS countries which is surely against its targets of strengthening connections with neighbors(railturkey.org). This railway is scheduled to be operational after 2015 but probably will be delayed for months or even years.

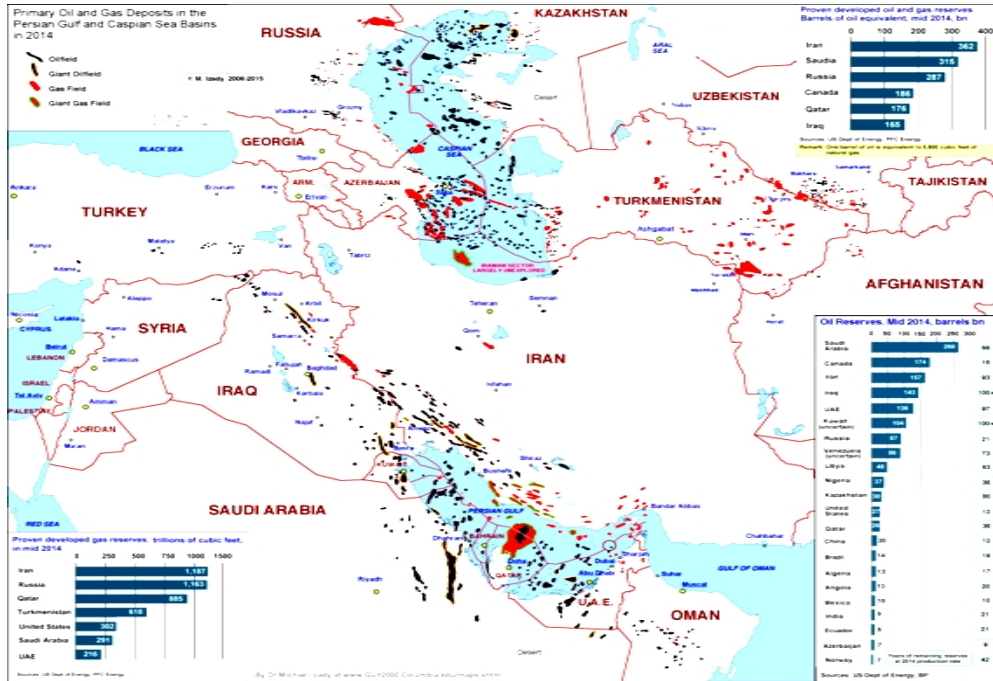
13 countries have joined TRACECA initiative. Four from central Asia except Turkmenistan, three from Caucasus, five from black sea including Bulgaria, Romania; Ukraine, Turkey, Moldavia plus Iran.

Southern Gas Corridor-SGC

SGC's history dates back to 1990s, when EU aimed Central Asia and Caspian region as a way to diversify its energy supplies. EU tries to develop sustainable relations with the countries within INOGATE and Baku Initiation.

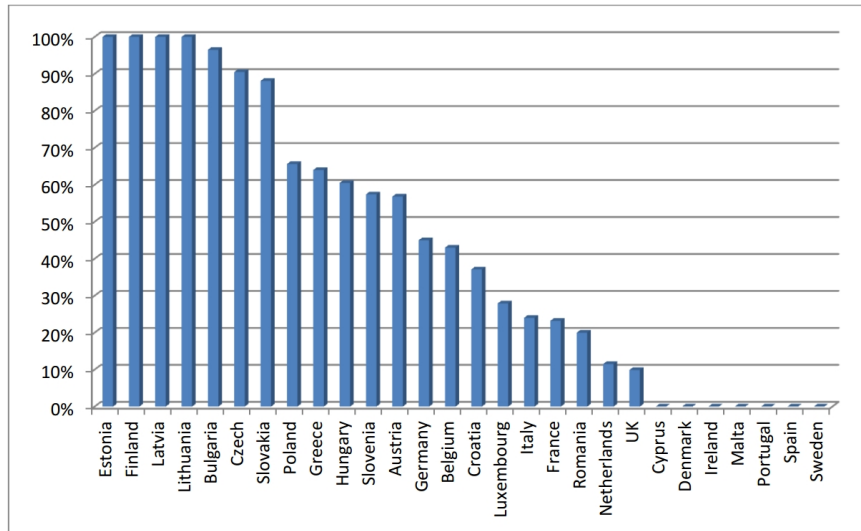
As a response to the energy security concerns emerged after this Russian-Ukrainian-European gas crisis, the European Commission (EC) launched in 2008 a double strategy, aimed at enhancing the EU gas security of supply architecture. On the one hand, the EC targeted to enhance the EU internal energy market in order to foster gas flows between EU Member States. On the other hand, it aimed at enhancing gas sources diversification, including building LNG receiving terminals in Central and South-East Europe and pursuing the 4th corridor (generally known as Southern Gas Corridor) in order to bring gas from Caspian and Middle Eastern producing countries to the EU. The official document on which the Southern Gas Corridor is rooted is thus represented by the Communication delivered in 2008 by the EC: the "Second Strategic Energy Review – An EU Energy Security and Solidarity Action Plan." The document recognized in the Southern Gas Corridor one of the EU's highest energy security priorities, outlying the need of a joint work between the EC, EU Member States and the countries concerned (Azerbaijan and Turkmenistan, Iraq and Mashreq countries) with the objective of rapidly securing firm commitments for the supply of natural gas

and the construction of the pipelines necessary for all stages of its development. Uzbekistan and Iran were also mentioned in the Communication as potential partners, albeit only in a long-term scenario. After the release of this document, the EC invited representatives of the countries concerned to a Ministerial level meeting aimed at securing concrete progress of the initiative in May 2009. The summit, held in Prague and named “Southern Corridor - New Silk Road”, served to express the political support to the realization of the Southern Gas Corridor as an important and mutually beneficial initiative, aimed at promoting the common prosperity, stability and security of all countries involved. The countries participating at the summit declared to consider the Southern Gas Corridor concept as a modern Silk Road interconnecting countries and people from different regions and establishing the adequate framework, necessary for encouraging trade, multidirectional exchange of know-how, technologies and experience(Natural Gas Europe-a).



Oil and gas reserves in Middle East and Caspian basin-source: gulf2000.columbia.edu/maps.shtml

The EU only receives a small part of its natural gas imports from remote areas as liquefied natural gas (LNG) by tanker. Due to lower cost and greater capacity, the largest part is imported into the EU, above all, by pipeline from the neighborhood through three large import corridors at the moment: from Russia (Eastern Gas Corridor), Norway (Northern Gas Corridor) and North Africa (Western Gas Corridor).⁴ Furthermore, the EU is planning to set up a fourth, a Southern Gas Corridor. This is to carry natural gas from the Caspian region and the Middle East to South East Europe and into the EU, above all, to Southern Germany, Austria and Italy(dgap.org).



Share of Russian gas in consumption, EU-28, 2012 data, Gasprom and BP Statistical review 2013- source: Clingendael International Energy Program.¹

EU in completion of its own “Trans European Networks-Energy(TEN-E)” program has envisaged TAP, ITGI, Nabucco and White Stream as Southern gas corridor Pipelines:

White Stream

For the first time the White Stream idea was voiced by Ukrainian officials in 2005. In 2006, the idea to pump Turkmenistan and Iran’s gas to Central and Eastern Europe via the Black Sea was mentioned again. In May 2007 it was presented at the Vienna gas forum. One more presentation took place at the energy security summit in Vilnius in October 2007 (trend.az). The Government of Georgia signed a Memorandum of Understanding with White Stream in March 2009. Turkey’s AKP government is practically blocking the transit of Azerbaijani gas to Europe and slowing down the Shah Deniz and Nabucco projects’ implementation. Consequently, Baku is

¹<http://www.clingendaelenergy.com/files.cfm?event=files.download&ui=9C1DEEC-100-5254CF-FD03186604989704>

now seeking alternative export solutions for its gas. Possible solutions include Russia and Iran overland, as well as the proposed White Stream pipeline across the Black Sea to Europe (jamestown.org). The pipeline will not cross turkey sector of the black sea and not rely on turkey's agreement. So Azerbaijan, Georgia and Romania are the main parties.

The EU has provided financial support to the W-Stream group under the Trans-European Energy Networks (TEN-E) Program of the European Commission and co-funded pre-feasibility studies. On 14 October 2013, White Stream was included in the renewed list of key selected energy infrastructure projects designated as Project of Common Interest-PCI, as a component of the SGC pipeline chain (white-stream.candc6.us).

The pipeline would branch off from the South Caucasus Pipeline near Tbilisi and run for 133 kilometres (83 mi) via Georgia to Supsa at the Black Sea. From Supsa there are two possible offshore routes. The direct route from Supsa to Constanța in Romania is 1,105 kilometres (687 mi) long. In this case, the long connection to Crimea would be built at the later stage. Another option is that the pipeline would run to Constanța through Crimea(Wikipedia). The pipeline at the Initial stage will supply 8bcm/y and in long term will increase to 32bcm/y (osce.org).

Nabucco

the countries participating at the Prague summit “Southern Corridor - New Silk Road” in may 2009 agreed to give necessary political support and, where possible, technical and financial assistance to the development of a project already launched in 2002 by a consortium composed by OMV of Austria, MOL Group of Hungary, Bulgargaz of Bulgaria, Transgaz of Romania and BOTAŞ of Turkey: Nabucco. (Natural Gas Europe-a)

The Nabucco gas pipeline is the flagship project of the EU's gas supply security strategy. The pipeline will traverse 3,300km, crossing four countries – Turkey, Bulgaria, Romania, and Hungary – before terminating in Austria. The pipeline is intended to carry gas from Central Asia and the

Middle East to the European market and will have an annual capacity of 31 billion cubic metres (bcm), equivalent to about 5% of current EU consumption. Construction is due to begin in 2011, with the pipeline becoming operational at a limited capacity of 8 bcm by 2014, reaching full capacity by 2019. First proposed by Austrian and Turkish energy companies OMV and Botas in 2002, Nabucco received €5m in seed funding from the European Commission in 2003. The Commission's grant paid for a feasibility study which concluded in 2004 that Nabucco was economically and technically viable and that the final cost of construction would be around €5 billion. Subsequent volatility in oil and steel prices has seen this estimate increase to the current projected figure of €7.9 billion. Following the positive result of the feasibility study, the Commission's Directorate General for Transport and Energy (DG-TREN) identified Nabucco as a priority project. The European Commission's 2nd Strategic Energy Review of November 2008 reiterated the priority commitment to Nabucco and singled out as key potential Nabucco supplier countries Azerbaijan, Turkmenistan, Iraq, and in the longer term Uzbekistan and Iran (Quaker Council for European Affairs (QCEA¹). The European Commission allocates €1.5–2 billion within the INOGATE program on technical assessment of the project (Mitrova, 2012, p. 69). Sections of the pipeline in the partnering countries include 2,730km in Turkey, 412km in Bulgaria, 469km in Romania, 384km in Hungary and 47km in Austria (hydrocarbons-technology.com²).

Interconnector Turkey-Greece-Italy-ITGI

Third project that realistically has a chance to realize is ITGI Pipeline. ITGI is a project led by the Franco-Italian energy firm Edison and the Greek state-owned gas company DEPA. The project comprises the already operational Interconnector Turkey-Greece pipeline (ITG), which has a

1 - <http://www.qcea.org/wp-content/uploads/2011/04/rprt-nabucco-en-dec-2009.pdf>-p6-11

2 - <http://www.hydrocarbons-technology.com/projects/nabuccopipeline>

transport capacity of about 11.5 bcm per year, and the proposed 800km long Interconnector Greece-Italy pipeline (IGI). The latter, expected to have a transport capacity of about 10 bcm a year, will be composed of two sections: a 600km onshore pipeline crossing Greek territory, and the 200km Poseidon pipeline running across the Ionian seabed. According to the consortium, the project's capacity could be upgraded to 20 bcm in case of further supplies from the Caspian region. Estimated realization costs vary between 1.5 and 2 billion dollars. ITGI and TAP are very similar projects, as they expect to bring the 10 bcm of gas available from Shah Deniz II to the Greek, Albanian and Italian markets. Both projects are flexible, relatively inexpensive, and completable in a short time frame, allowing Azeri gas to be marketable as soon as it comes onstream in 2017 (Sartori, 2012, pp. 3-4). In addition, the Greece-Bulgaria Interconnector is a part of this project.

Trans-Adriatic Pipeline-TAP

Among four alternative Projects, TAP selected to be operational in June 2013. It will be first operating project within Southern Gas Corridor Initiative. So Today, Operating or Constructing SGC The project is composed of 4 components:

1. Shah Deniz II Natural Gas Field
2. South Caucasus Pipeline (SCP)
3. Trans Anatolian Natural Gas Pipeline (TANAP)
4. Trans Adriatic Pipeline (TAP)

The Shah Deniz natural gas field is one of the world's largest natural gas fields, and the largest in Azerbaijan. It is located 55 km from Baku in the offshore section of the Caspian Sea. It holds almost 0.9 trillion cubic meters of natural gas. Shah Deniz I, the first stage of the Shah Deniz field, has been operational since 2006 and produces 9 billion cubic meters of natural gas per year, of which almost 6.6 bcm is delivered to Turkey. Shah Deniz II, the second stage of the Shah Deniz field, is a major source base and the

upstream part of the Southern Gas Corridor. It is expected that the Shah Deniz II field will be operational by 2018. The project will supply natural gas to the European market directly from Azerbaijan for the first time, opening the Southern Gas Corridor. As part of the project, 25-year sales agreements were reached on September 19, 2013 for over 10 billion cubic meters of natural gas per year from the Shah Deniz II field. Nine companies will buy this gas from Italy, Greece and Bulgaria. The Final Investment Decision (FID) was signed on December 17, 2013 for the Shah Deniz II project.

The midstream part of the Southern Gas Corridor project has three rings: the South Caucasus Pipeline, TANAP and TAP, the total length of which will be 3500 km. The length of the SCP pipeline is 691 km, with 443 km in Azerbaijan and 248 km in Georgia. It starts in Azerbaijan's Sangachal terminal and ends at the Georgia-Turkey border. As part of the Shah Deniz Project, the SCP will be expanded. The expansion will entail laying a new pipeline through Azerbaijan and constructing two new compressor stations in Georgia. This will triple the gas volume transported via the pipeline, reaching over 20 billion cubic meters per year.

TANAP will start at the Georgia-Turkey border and end at the Turkey-Greece border, passing 20 cities on its route through Turkey. With regard to its technical features, at 56 inches in diameter, it is the second largest pipeline in the world. Its annual capacity will be 31 bcm, expandable to 60 bcm (Natural Gas Europe-c). This pipeline will deliver gas to TAP pipeline in Turkey-Greece border.

TAP is an 870 km-long projected gas pipeline designed to provide the missing link for gas transportation from Kipoi, on the border of Turkey and Greece (connection point with TANAP), to Brindisi, destination point in Italy, through Albania and the Adriatic Sea. The length of the Greek section will be 547 km, the length of the Albanian section will be 211 km and the length of the offshore pipeline section will be 105 km, at a maximum depth

of 820 mt. The initial capacity of the pipeline will be about 10 bcm of gas per year, but in the future the addition of two extra compressor stations could double throughput to more than 20 bcm/year as additional energy supplies will come on stream in the wider Caspian region(Natural Gas Europe-a). Also several separate energy projects are developing within SGC Initiative in parallel with TAP:

- Expansion of the natural gas processing plant at the Sangachal Terminal on the Caspian Sea coast in Azerbaijan.
- Expansion of the Italian gas transmission network.
- Possibilities for further connection to gas networks in South Eastern, Central and Western Europe (Trans Adriatic pipeline official website¹)

So in a first phase it is expected that by 2020, 10 bcm/y of natural gas produced in Azerbaijan will reach the European market through the Southern Gas Corridor. Moreover, this new pipeline connection is vital in providing a connection to the Middle East. The currently envisaged infrastructure in Turkey could accommodate up to 25 bcm/y for the European market. In the longer term perspective, other countries such as Turkmenistan, Iraq and Iran, if conditions are met to lift the sanctions regime, could also significantly contribute to the enlargement of the Southern Gas Corridor (Natural Gas Europe-a).

1 - <http://www.tap-ag.com/the-pipeline/the-big-picture/southern-gas-corridor>



South Caucasus, Trans Anatolian (TANAP), Nabucco and Trans Adriatic(TAP) Pipelines- Source: The European Institute¹

Table 1: Pipelines in Summary

Name	Envisaged capacity(bcm)
Trance-Caspian Pipeline-TCP	30
Southern Caucasus Pipeline-SCP	25
Trans-Anatolian Pipeline	Expandable to 60
Trans-Adriatic Pipeline-TAP	10 up to 20
Nabucco	31
South Stream	63
Turkish Stream	63
Peace Pipeline	40
TAPI	27

Source: Natural Gas Europe-a, Natural Gas Europe-c, osce.org, Sartori, 2012, Wikipedia

Which Countries could supply gas to SGC?

Theatrically, Iran is by far the largest potential gas supplier. For example The Nabucco pipeline was initially conceived as a way of bringing Iranian gas to Europe. Iran’s proven gas reserves are huge at 33.8 trillion cubic meters (tcm), accounting for 18.2% of world gas reserves. At the moment

¹ -<http://www.europeaninstitute.org/index.php/ei-blog/181-august-2013/1771-azerbaijan-chooses-tap-over-nabucco-to-provide-gas-pipeline-to-europe-88>

Iran is producing 166.6 bcm of gas annually, and consuming roughly the same amount a year domestically (BP statistical review 2014). In order to increase its export capacity, Iran is aiming to increase its current annual gas production to 475 bcm by 2020. Iran's participation in the pipelines is complicated by U.S sanctions on the country, which discourage European companies from doing business in Iran, for fear of facing U.S sanctions themselves. Iran's proven reserves are four times greater than all the Central Asian states combined.

Iraq is also a potential SGC gas supplier with substantial proven natural gas reserves of 3.6 tcm accounting for 1.9% of world gas reserves (BP statistical review 2014). Once Hungarian and Austrian energy companies MOL and OMV, both Nabucco consortium members, struck a deal with the semi-autonomous Kurdish region in the north of Iraq to develop gas fields. In theory that would provide about 15 bcm per year. However it remains unclear whether this gas will be exploited soon, given the ongoing dispute between central government in Baghdad and the Kurdish region over distribution of oil and gas revenues moreover ISIL Crisis.

Azerbaijan: Despite its apparent willingness to supply the Pipelines, Azerbaijan does not have enough gas available for export to supply much more than 8 bcm per year.

In order to fill Corridor's capacity, Azeri gas would need to be augmented with gas from Turkmenistan. Turkmenistan produces 62.3 bcm of gas annually and according to BP has proven reserves of 17.5 tcm. The Turkmen government keeps close to its chest detailed information about the extent of its gas resources, but has claimed that Turkmen gas reserves are as large as 26 tcm. In 2008, the Berdymukhamedov government invited British company Gaffney, Cline & Associates to carry out an independent audit on the South Iolatan gas field in eastern Turkmenistan. The audit concluded that South Iolatan is among the five biggest gas fields in the world, and that this field alone would be capable of doubling Turkmenistan's gas output.

Neither Kazakhstan nor Uzbekistan have the export potential in the short term to supply SGC substantially, which leaves Turkmenistan as the only Central Asian state that could supply significant quantities of gas. The European Commission has launched a diplomatic effort to convince Ashgabat to commit to supplying the pipeline. Benita Ferrero-Waldner, EU External Relations Commissioner met with President Berdymukhamedov to discuss energy matters in Brussels in early November 2007. The following week, Energy Commissioner Andris Piebalgs made an official visit to Turkmenistan for further talks. This effort appeared to bear some fruit in April 2008 when President Berdymukhamedov confirmed that 10 bcm of gas annually would be earmarked for export to EU Member States. In May 2008 a Memorandum of Understanding (MoU) was signed between the EU and Turkmenistan, a development which the EU claimed took 'EU-Turkmenistan relations to a higher level by official sing bilateral energy cooperation in such areas as investment, production, energy technology, energy efficiency, renewable and the transport and trade of energy products (Quaker Council for European Affairs (QCEA¹).

Without Iran's presence in the SGC, latter might face with serious problems regarding source of additional gas in the future. Thus, according to the BP Statistical Review of World Energy 2014, Iran holds 33.8 tcm of natural gas reserves, while Azerbaijan holds 0.9 tcm only.

1 - <http://www.qcea.org/wp-content/uploads/2011/04/rprt-nabucco-en-dec-2009.pdf>-p6-11

Table 2: Gas related statistics for 2013

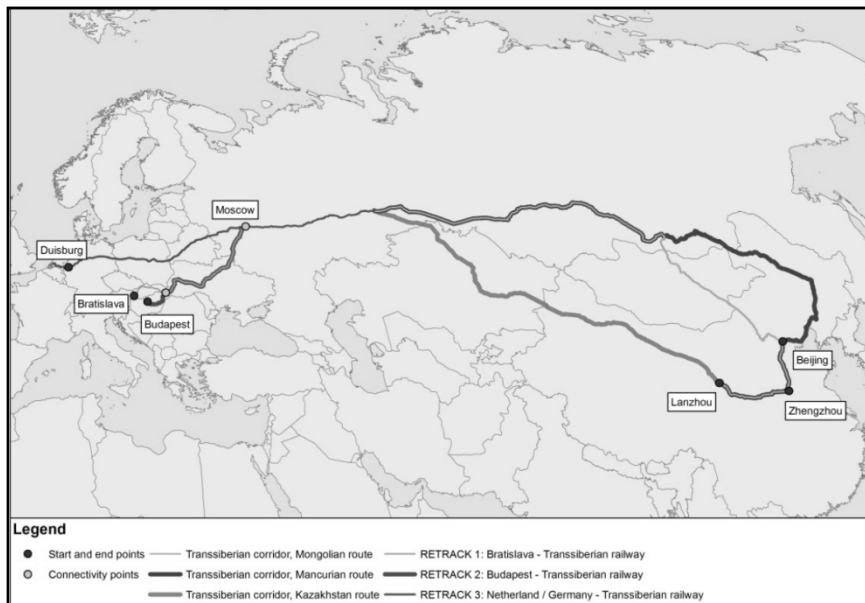
Country	Proved reserves Thousand billion cubic meter / year	Annual production Thousand billion cubic meter / year	Annual consumption Thousand billion cubic meter / year
Azerbaijan	0.9	16.2	8.6
Uzbekistan	1.1	55.2	45.2
Iran	33.8	166.6	162.2
Turkmenistan	17.5	62.3	22.3
Iraq	3.6	0.6	1.3
Kazakhstan	1.5	18.5	11.4
EU			541

Source: Clingendael International Energy Program (CIEP¹) and BP statistical review 2014

Russia considerations

From a Realistic point of view, the Corridors are not only economic Initiatives but also can be used as a political leverage for countries en route. Maintenance of the economic leverages on EU in Russia's hands is one of most important concerns of the Moscow at the Post-Cold war Era. In confront with EU supported central Transport Corridor named TRACECA, Russia offered operating Northern Corridors (Trans-Siberian Railway and Trans-Kazakhstan Route) and proposed Southern Corridor (named "International North-South Corridor" that crosses Iran's soil). With this corridors Russia try to strengthen East-West transportation monopoly.

¹ <http://www.clingendaelenergy.com/files.cfm?event=files.download&ui=9C1DEEC-1005254-CF-FD03186604989704>



Trans-Sib corridor with associated railway routes with Europe and China-Source: Islam, Zunder, Jackson, Nesterova, 2013

Also Interstate Energy Corridors are one of the most important fields of Russian Interests. Moscow uses this leverage to stimulate immediate reactions and impose its will quickly. Even Russia's allies are not secure of this leverage.



Major Russian gas pipelines to Europe; Source: Wikipedia

Russia still maintains dominance over Turkmen gas export routes. Russia buys Turkmen gas, and then exports it to Europe. Russia is working on its own pipelines and projects, which are designed to compete with SGC pipelines by traversing a broadly similar route. The EU and Russia state publicly that the pipelines can coexist, but in reality Russia and the EU are competing for the limited gas resources of Caspian region. Proposing South Stream and Turkish Stream pipelines just a few days after proposing EU

supported Nabucco mean that Russia tries to maintain its own dominant position in EU energy market. So disintegration between considerations of the EU and Russia over International Corridors will remain important source of competition and even tension between parties.

TRACECA and the Post-Sanction Era

Though TRACECA is an interstate corridor, majority of shipment transportations are internal. For example Official Customs data suggests that in 2010, only about 1.3 million tons of cargo taken along the TRACECA route (out of a total 21.7 million) was carried by trucks across Azerbaijan–Georgia border (Ziadov, 2011:31).

Unreliable transit time, high cost and damage and cargo theft are the most important barriers that TRACECA has been faced. Numerous border-crossings, infrastructure and rolling stock constraints, multiple border-crossings and the lack of visible cooperation among the countries. The technical and operational barriers including change of gauge, differing power supply and signaling systems and non-automated and fragmented information systems are issues TRACECA is facing. Among alternative corridors The TRACECA route is the most problematic option.

Study on corridors in Eurasia reveals that the Corridor which starts in the Mediterranean and goes via Azerbaijan to China's Xinjiang Province, is one of the most unpredictable in terms of timing. When there are no delays, the road transportation along this corridor has relatively high average speed (40.5-49.4 km/h). But frequent delays reduce the average speed to 19.3-16.1 km/h; thus delivery time is unpredictable (Ziadov, 2011:32).

Table 3: Alternative Transport Routes from Istanbul (Turkey) to Dostik (Kazakhstan-China Border)

Route Name	Distance/km
Istanbul-Kars-Akhalkalaki-Tbilisi-Baku-Caspian Sea (ferry)-Turkmenbashi-Ashgabat-Tashkent-Almaty-Dostik	6873
Istanbul-Kars-Akhalkalaki-Tbilisi-Baku-Caspian Sea (ferry)-Aktau-Kandiagash-Orsk-Akmola-Dostik	7089
Istanbul-Van Lake (ferry)-Kapikoy-Tehran-Mashad-Sarakhs-Tashkent-Almaty-Dostik	7286

Source: Ziadov, p. 41

Over the past ten years, EU-China trade has tripled in value, increasing from €101 billion in 2000 to €297 billion in 2009 and exceeding €395 billion in 2010. China is the EU's second-largest trading partner after the United States, accounting for 14% of total EU external trade. In terms of volume, in 2010, a total of 86.3 million tons of goods were exchanged between the EU and China. China exported 53.6 million tons of goods to EU27 countries and imported 32.8 million. EU15 countries accounted for 95% of exports and 90% of China's imports. Nearly 95% of exports and 89% of imports were transported by sea (Ziadov, 2011: pp.12-13). Also volume of Rail transported merchandise obviously declined within these years.

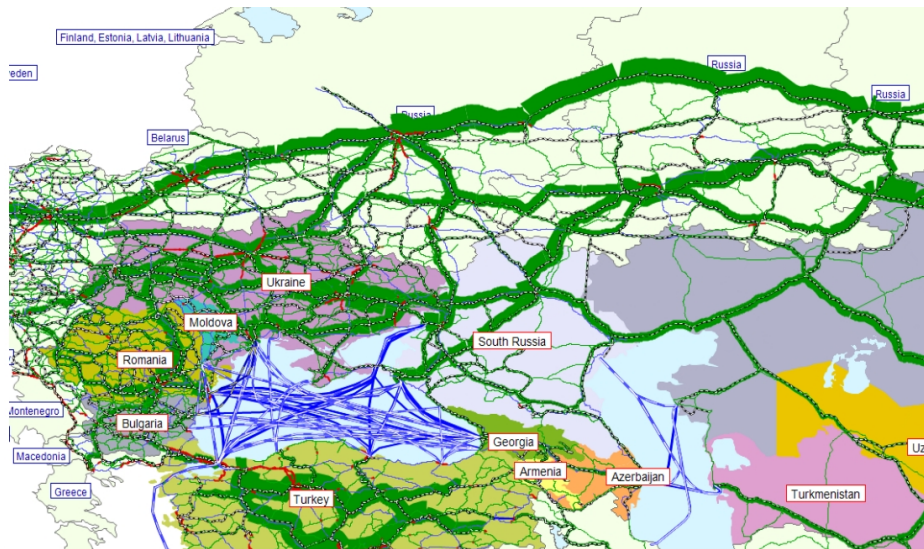
Table 4: EU-China Trade by Volume and Mode of Transport (in tons, %)

Export to China	2006	2008	2010
EU25	21,441,020	26,165,257	32,763,233
EU15 Share	96.4%	96.3%	94.8%
by Sea	19,111,954	24,619,995	30,964,818
by Air	228,120	340,441	569,419
by Rail	209,788	133,802	194,569
by Road	1,328,491	984,050	981,353
Other	502,667	86,969	53,074

Imports From China			
EU25	59,785,557	67,184,012	53,586,490
EU15 Share	92.7%	90.3%	90.5%
by Sea	50,805,154	59,297,255	47,669,628
by Air	879,138	900,961	1,087,719
by Rail	378,733	452,855	347,114
by Road	3,172,514	3,119,978	3,138,398
Other	4,550,018	3,412,963	1,343,631
Total	81,226,577	93,389,269	86,349,723

Source: Ziadov, p.13

These data showing TRACECA more than anything suffers lack of Economic advantage and Infrastructure limitations. In other words impact of political developments on obstacles of TRACECA is low.



Freight transport demand forecast for target year 2020 (railway) - source: (Hamed, Bozhydarnik, Gasukha, 2014).

I. R. Iran, Southern Gas Corridor and Post-Sanctions Era

US and EU-imposed sanctions against Iran caused the withdrawal of European energy companies from country and made Iran's possible contribution to the SGC unrealistic. The sanctions made Nabucco partners refrain from not only receiving Iranian gas, but also transporting Turkmen gas through Iran. U.S and EU imposed sanctions over Iran's oil/gas exports, also raised concern on the implications of the sanctions for the Shah Deniz Consortium, as Iran was represented with 10% in Shah Deniz Consortium through Naftiran Intertrade Company (NICO), a subsidiary of National Iranian Oil Company and the U.S would take action against companies doing business with Iran. However, active lobbying from Brussels and London managed to keep the Shah Deniz field development exempted from the sanctions. Thus, according to "Iran Threat Reductions Act" that adopted by U.S Congress, there are can be an "exceptions for certain natural gas projects", including "the development of natural gas and the construction and operation of a pipeline to transport natural gas from Azerbaijan to Turkey and Europe", which provide their "energy security and energy independence from the Russia".

In fact, it is not clear yet whether Iran can supply big amount of gas for Southern Gas Corridor. First of all, even if EU Commission leaves the 50% of TAP's total capacity for third party access, 100% of the initial capacity of TAP, as well as that of TANAP are secured by 25-year long-term agreements to pump Azeri gas. Thus, Azeri gas has already found its consumers, while Iran has not yet defined its potential customers and supply requirements. Consequently, there is still not a certain legal framework to transport Iranian gas to Europe. Secondly, Iran's participation in TANAP doesn't mean that Iran will supply its gas via TANAP once it joins the TANAP Consortium. Because, since Iran is represented in Shah Deniz Consortium with its NICO, it enables Iran to participate in the transportation of Azeri gas only for the initial capacity of both TANAP and TAP. Third, in case Iran plans to deliver to Europe huge amount of gas in the expansion

capacity of TANAP and TAP, its potential customers will need relevant interconnectors with relevant capacity. In this regard, Iran can revive the Nabucco-West pipeline, whose initial capacity was 20 bcm/a. Fourth, given the damages that sanctions left over Iran's energy sector, including the delays in the development of its gas fields in the Persian Gulf and domestic consumptions issues, Iran need at least 5-6 year to prepare its export toward Europe, for construction of new pipelines and development of new fields. Moreover, Iranian gas, exported to Turkey is set to be 490 USD per 1000 cm, which is more expensive than the Russian (425 USD) and Azeri (335 USD) gas prices. In this regard, given the current price of Iranian gas and potential transit fees, the price of Iranian gas for European consumers is vague for the time being. Furthermore, Iran's gas export to Southeast Europe through Turkey can hit Russia's Turkish Stream and its potential markets. In terms of volume and market diversification, Iran and Russia will be serious competitors in Europe once the sanctions are removed. Participation of Iran in the SGC means the weakening the Russia's domination in the Southeast Europe. Gazprom is always reluctant to see other major gas supplier in Europe (Natural Gas Europe-b).

Given Azerbaijan's limited gas resources and EU's urgent need for further gas supply from the Southern Gas Corridor-SGC, we can expect that Iran will actively join this Initiative after lifting sanctions. It is remarkable that even in official documents of the European Commission they obviously pointed Iran. For example in very important document that approved in 2008 named "Second Strategic Energy Review: AN EU ENERGY SECURITY AND SOLIDARITY ACTION PLAN" obviously Iran considered as an important partner of the project if political conditions permit:

"A southern gas corridor must be developed for the supply of gas from Caspian and Middle Eastern sources, which could potentially supply a significant part of the EU's future needs. This is one of the EU's highest

energy security priorities. The Commission and Member States need to work with the countries concerned, notably with partners such as Azerbaijan and Turkmenistan, Iraq and Mashreq countries, amongst others, with the joint objective of rapidly securing firm commitments for the supply of gas and the construction of the pipelines necessary for all stages of its development. In the longer term, when political conditions permit, supplies from other countries in the region, such as Uzbekistan and Iran, should represent a further significant supply source for the EU¹.

Given cited signs we can expect that lifting of the sanctions will cause Iran's Active partnership in the Southern Gas Corridor.

Findings and Conclusion

After review of the EU's principles, objectives and priorities this article presented a comprehensive and exact view of operating, constructing or envisaged programs and Initiatives named TRACECA and Southern Gas Corridor. These programs and Initiatives are not limited to Post-Soviet Space but also contain expansion of infrastructures and official arrangements to Middle East, Black sea and even EU. In 2nd step the author survey Russia interests and considerations. Russia persists on its own corridors in both energy and transportation. For Russia gas corridors are more urgent and immediate than transport corridors. In other terms For Russia gas leverage is much more important than transport corridors because it can provide stronger leverage to influence EU and its members. Finally the author evaluated obstacles and Iran's situation in these two Initiatives in Post-Sanctions Era.

Given technical obstacles and political signs, TRACECA's status in Post-Soviet Era will not have considerable changes at least in mid-term but the author recommends that I.R. Iran should collect foreign investments and develop road routes, facilitate administrative arrangements and eliminate unnecessary obstacles, and gradually increase truck transportation via Iran.

1- eur-lex.europa.eu

Despite TRACECA, urgency and immediacy of the natural gas for EU and priority of developing 4th gas corridor from south are strong reasons that suggest Iran will join actively in southern gas corridor. Iran's gas can bring existing and envisaged pipelines to economic capacity. Even in mid and long term Iran's additional gas can revive other pipelines such as Nabucco.

Necessity of the Iran's gas resources is even cited obviously in European Commission official documents. therefore I. R. Iran in Post-Sanction Era should prevent constructing Trans-Caspian Pipeline, absorb Foreign Investment, increase investment on developing gas Infrastructure, optimize internal gas consumption and create surplus capacity.

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References

- A Hamed, TV Bozhydarnik, LO Gasukha, 2014, Marketing of transport corridors. "A systematic approach to increase market share in transit traffic" Available at:
http://www.irbis-nbuv.gov.ua/cgi-bin/irbis_nbuv/cgiirbis_64.exe?C21COM=2&I21DBN=UJRN&P21DBN=UJRN&IMAGE_FILE_DOWNLOAD=1&Image_file_name=PDF/ecfor_2014_2_14.pdf accessed on 2015-07-06.
- BP statistical review 2014. Available at:
<http://www.bp.com/content/dam/bp/pdf/Energy-economics/statistical-review-2014/BP-statistical-review-of-world-energy-2014-full-report.pdf> accessed on: 2015-07-19.
- Clingendael International Energy Program, 2013, "Russian gas imports to Europe and security of supply-factsheet" available on:
<http://www.clingendaelenergy.com/files.cfm?event=files.download&ui=9C1DEEC1-00-5254CF-FD03186604989704> accessed on 2015-07-10.
- D Islam, T Zunder, R Jackson, N Nesterova, 2013, "The potential of alternative rail freight transport corridors between Central Europe and China", *Transport Problems*, vol 8 issue 4.
- eur-lex.europa.eu, 2008, "second strategic energy review — an eu energy security and solidarity action plan", Available at:
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0781:FIN:EN:PDF> accessed on: 2015-07-09.
- gulf2000 project, "Oil and Gas Deposits in the Persian Gulf and the Caspian Sea Basins in 2014", Available at:
http://gulf2000.columbia.edu/images/maps/Oil_and_Oil_Facilities_lg.png.
- H Yildirim Keser, 2014, "Importance of Transport Corridors in Regional Development- The Case of TRACECA", *Sosyoekonomi*, 2015, VOL 23(24). Available at:
<http://dergipark.ulakbim.gov.tr/sosyoekonomi/article/download/5000113919/5000106073> accessed on 2015-07-06.
- hydrocarbons-technology, 2015, "Nabucco Gas Pipeline" Available at:
www.hydrocarbons-technology.com/projects/nabuccopipeline accessed on 2015-08-26.
- Jamestown, 2009, "White Stream can De-Monopolize the Turkish Transit of Gas to Europe", Available at:
[http://www.jamestown.org/programs/edm/single/?tx_ttnews\[tt_news\]=35667&cHash=df027de50e#VZwO87XSwg8](http://www.jamestown.org/programs/edm/single/?tx_ttnews[tt_news]=35667&cHash=df027de50e#VZwO87XSwg8) accessed on 2015-07-07.
- M Dekanozishvili, 2004, "The EU in the South Caucasus By What Means, to What Ends", *The Georgian Foundation for Strategic and International Studies*, Available at:
http://gfsis.org/media/activities/thumb1_/pub/files/publications_politics/dekanozishvili_The_EU.pdf.
- N Sartori, 2012, "The European Commission's Policy Towards the Southern Gas Corridor Between National Interests and Economic Fundamentals", *Institute affair international*, available at:

- pubblicazioni.iai.it/pdf/DocIAI/iaiwp1201.pdf.
- Natural Gas Europe-a, 2015, "The Southern Gas Corridor and the EU Gas Security of Supply: What's Next?", Available at:
<http://www.naturalgaseurope.com/southern-gas-corridor-and-eu-gas-security-of-supply-22688>.
 - Natural Gas Europe-b, 2015, "Removal of Sanctions from Iran: What Does it Promise for the Southern Gas Corridor?", Available at:
<http://www.naturalgaseurope.com/removal-of-iran-sanctions-and-southern-gas-corridor-23389>
accessed on: 2015-07-09.
 - Natural Gas Europe-c, 2015, "Energy Security in SE Europe: The Role of the Southern Gas Corridor", Available at:
<http://www.naturalgaseurope.com/energy-security-the-role-of-southern-gas-corridor-22698>
Accessed on 2015-07-09.
 - OSCE, 2010, White Stream™, available at:
<http://www.osce.org/ashgabat/67922?download=true> accessed on 2015-07-07.
 - Quaker Council for European Affairs (QCEA), 2009, "The Nabucco Gas Pipeline: A chance for the EU to push for change in Turkmenistan", Available at:
<http://www.qcea.org/wp-content/uploads/2011/04/rprt-nabucco-en-dec-2009.pdf>.
 - R Abazov, 2007, "Culture and Customs of the Central Asian Republics", Greenwood Press: United States of America.
 - ec.europa.eu, 2015, "Imports and secure supplies" Available at:
<https://ec.europa.eu/energy/en/topics/imports-and-secure-supplies>.
 - railturkey.org, 2014, "10 Things to Know about Baku-Tbilisi-Kars Railway Project". Available at: <http://railturkey.org/2014/10/20/baku-tblisi-kars-railway/> Accessed on: 2015-07-06.
 - T Ziadov, 2011, "Azerbaijan as a Regional Hub in Central Eurasia". John Hopkins University and Azerbaijan diplomatic academy.
 - T Gorshkov, G Bagaturia, 2001, "TRACECA–Restoration of Silk Route", japan railway and transport review, Available at: jrtr.net/jrtr28/pdf/f50_gor.pdf.
 - The Central Asia- Caucasus ANALYST, 2015, "THE KARS-AKHALKALAKI RAILROAD: A MISSING LINK BETWEEN EUROPE AND ASIA" available at:
<http://www.cacianalyst.org/publications/analytical-articles/item/10802-analytical-articles-caci-analyst-2006-4-19-art-10802.html> accessed on 2015-07-06.
 - The European Institute, 2013, "Azerbaijan Chooses TAP over Nabucco to Provide Gas Pipeline to Europe (8/8)" Available on:
<http://www.europeaninstitute.org/index.php/ei-blog/181-august-2013/1771-azerbaijan-chooses-tap-over-nabucco-to-provide-gas-pipeline-to-europe-88> accessed on: 2015-08-26.
 - The Quaker Council for European Affairs, 2009, "The Nabucco Gas Pipeline: A chance for the EU to push for change in Turkmenistan" Available at:
<http://www.qcea.org/wp-content/uploads/2011/04/rprt-nabucco-en-dec-2009.pdf> accessed on: 2015-08-26.
 - traceca.org.tr, 2015, "TRACECA map". Accessed on 2015-08-26.
 - Trans Adriatic pipeline official website, "Southern Gas Corridor" Available on:
<http://www.tap-ag.com/the-pipeline/the-big-picture/southern-gas-corridor> accessed on 2015-08-26.

- Wikipedia, 2015, "Trans-Caspian Gas Pipeline", Available on:
https://en.wikipedia.org/wiki/Trans-Caspian_Gas_Pipeline - Accessed on 2015-07-19.
- Wikipedia, 2015, Iran–Pakistan gas pipeline, Available on:
https://en.wikipedia.org/wiki/Iran%E2%80%93Pakistan_gas_pipeline Accessed on 2015-07-19.
- Wikipedia, 2015, Trans-Afghanistan Pipeline, Available on:
https://en.wikipedia.org/wiki/Trans-Afghanistan_Pipeline Accessed on 2015-07-19.
- Wikipedia, 2015, Trans-Caspian Gas Pipeline, Available on:
https://en.wikipedia.org/wiki/Trans-Caspian_Gas_Pipeline Accessed on 2015-07-19.