Regional energy projects in the Eurasian Area *

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Summary: The Eurasian area has a very rich energy reserves, and is characterized by a complex network of relationships between major suppliers and consumers. The central place in this area has Russia as a country richest in energy resources in Eurasia. Beside her, the European Union is the largest economic and political grouping in the world, and a huge consumer of energy. The dynamic development of Chinese economy requires more energy imports by China. Dependence of the European Union and China on imported energy is high and will grow in the future. Russia is the world's dominant natural gas producer and one of the two largest oil producers in the world. Russia is the largest natural gas supplier of the EU and a significant oil and natural gas supplier of China. Energy projects in Eurasia are the result of the need to strengthen the stability of energy supplies, efforts to diversify sources of supply, and the geographic redistribution of Russian oil and gas exports. Although the interests of the main actors often do not agree, the reasons of energy security affect the development of joint energy projects.

Keywords: energy, security, oil, gas, LNG, pipelines

Rezime: Prostor Evroazije poseduje izuzetno bogate rezerve energenata, i karakteriše ga složena mreža odnosa između glavnih snabdevača i potrošača. Centralno mesto na ovom prostoru ima Rusija, kao zemlja najbogatija energentima u Evroaziji. Pored nje, Evropska unija je najveća ekonomska i politička grupacija na svetu, i veliki potrošač energije. Dinamičan razvoj kineske privrede zahteva sve više energenata koje Kina uvozi. Uvozna zavisnost Evropske unije i Kine za energentima je visoka i rašće u budućnosti. Rusija je dominantan svetski proizvođač prirodnog gasa i jedan od dva najveća proizvođača nafte u svetu. Rusija je najveći snabdevač Evropske unije prirodnim gasom i značajan snabdevač Kine naftom i prirodnim gasom. Energetski projekti u Evroaziji su rezultat potrebe za jačanjem stabilnosti u snabdevanju energentima, nastojanja za diversifikacijom izvora snabdevanja, i geografske redistribucije ruskog izvoza nafte i gasa. Iako često interesi glavnih aktera nisu saglasni, razlozi energetske bezbednosti utiču na razvoj zajedničkih energetskih projekata.

Ključne reči: energija, nafta, gas, tečni prirodni gas, cevovodi

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1. INTRADUCTION

Europe and Asia are cradles of ancient peoples and cultures, now the development place of some of the most dynamic economies in the world. The most important actors in this area, in every sense, and going from West to East, are the European Union, Russia, China, Japan and India. When it comes to energy properly meaning, then we must accept the position and influence in the matter by countries of the Near and Middle East, and Central Asia. Turkey as a transit area, also can not be ignored. Finally, the United States as a global power, and its transnational energy corporations have a very large impact on energy and security issues, and in this vast area and globally.

It is obvious that only the spatial definition of the scope of this work has considerable latitude, for once not behind any aspect of content: regional energy projects and security. If we limit ourselves to energy security, it may be best defined as "the availability of clean supplies at affordable prices". However, the simplicity of the definition does not match the complex relationships in the real economy and political life of the people in this region. The first reason is the strategic nature of energy to every nation and country, absolutely in every respect. In importance, availability and access to drinking water sources shared the fate of the energy. Thus, the issue of energy security can hardly be separated from the overall security at the national, regional and global levels, except for analytical reasons. "Issues related to oil security have been studied intensively for over 20 years, but experts still disagree on the magnitude of the Even a superficial look at the state of resources, reserves, exploitation and transport of energy in the world indicates the great significance they have, so in all matters relating to them in the game all the arguments: economic, political, military, national, developers and others.

This state of affairs imposes certain methodological limitations and directions in the analysis, and solution seems the most meaningful approach would be limited to the major regional energy projects in the region of Europe and Asia, especially the newer ones and those in building, relationships among the major production and consumer regions, and geopolitical relations between the greatest countries and groups, and finally, the implications for the overall, present and future, security in those areas.

In several respects, particularly energetic, Russia has the central and most important place in the Eurasian area. Most of the major energy projects are related to Russia, directly or indirectly, or represent physical transportation link between Russia's sources and consumer regions, or the attempts to diminish Russia's dominance in the region. China, like other economies of the world, and probably the first one in the foreseeable future, is naturally related to the Russian energy sources. Chinese attempts to diversify its sources and routes of energy supply, as well as her ever-growing investment activity in the energy sector abroad, are the second part of this analysis. The third is devoted to the European Union, as the producer and consumer of energy, and relationships of

its members with key suppliers. The fourth part follows the projects in Central Asia and the Middle East, and their relationship with the Indian subcontinent. The last part of the work analyzes the strategic nature of energy, and impact of new energy projects on the security of the Eurasian area.

2. RESERVES, PRODUCTION, AND OIL AND GAS MARKETS IN THE WORLD: BASIC DATA

Respectable oil and natural gas reserves are in Russia, the Caspian region, Middle East, North Africa, North and South America. Although alternative energy sources increasing attention is given, all estimates indicate that in the next 20 to 30 years the oil and natural gas remain the main energy sources.

Discovery and the beginning of modern exploitation of oil is closely related to two dates and two locations, as the historians do not agree: Titusville, Pensilvania in 1859, and Bibi-Aybat, near Baku in 1846.

According to the volume of proven reserves of crude oil, ranking of the richest countries in the world has the following order: Saudi Arabia, Iran, Iraq, Kuwait, United Arab Emirates - UEA, Venezuela and Russia. "The prospects of oil supply can not be discussed in isolation of the endowments of oil, therefore, the future of oil supply will be determined mainly by two key factors, the remaining reserves and price. Other important factors that affect reserves are the potential demand conditions, the tecnology developments in exploration and extraction, and the political parameters."

In 2009, total global production of crude oil was 85.05 million barrels per day. In the same year, the top ten ranked countries in the world produced (in million tons) of crude oil the following amounts: Russia 494 (12.9% of the total world production), Saudi Arabia 452 (11.8%), USA 320 (8, 3%), Iran 206 (5.4%), China 194 (5%), Canada 152 (4%), Mexico 146 (3.8%), Kuwait 124 (3.2%), UAE 120 (3, 1%), while the rest of the world waste 1509 million tonnes (39.2%), so the whole world has produced 3101 million tonnes of crude oil in 2009. According to data for 2008, ranking the largest exporters and importers had a different sequence. The first ten net exporting countries had the following quantities of exports (in million of tons): Saudi Arabia 355, Russia 241, Iran 120, UAE 108, Nigeria 102, Angola 82, Norway 90, Kuwait 89, Iraq 88, Venezuela 84, while the other countries in the world produced 593 million tons. The ten largest net importer of crude oil were imported the following quantities in 2008 (in million tons): United States 564, Japan 199, China 175, India 128, South Korea 116, Germany 105, Italy 88, France 83, Spain 61, Netherlands 57, and all other countries of the world 514 million tons.

"The main natural gas reserves are found in Russia (25–30 per cent according to estimations), in Iran (15 per cent) and in Qatar (15 per cent). The main natural gas producers are Russia (23 per cent of the world production), the USA (21 per

cent), Canada (7 per cent), the UK (4 per cent), Algeria (4 per cent), the Netherlands (3 per cent) and Indonesia (3 per cent). The main natural gas exporters are Russia (22 per cent of international exchanges), Canada (12 per cent), Norway (11 per cent), Algeria (10 per cent), the Netherlands (7 per cent) and Indonesia (6 per cent). The main gas importers are the USA (17 per cent), Germany (13 per cent), Japan (12 per cent), Ukraine (10 per cent), Italy (8 per cent) and France (7 per cent)." Although the link between the reserve and the share of world exports is not symmetrical, it is obvious the dominant position of Russia in Europe and Asia. The market for oil and natural gas have oligopoly characteristics, both on the supply side and demand side. The main producers, sellers and buyers are either state-owned or large transnational corporations.

As in the case of crude oil, the reserves and deposits of natural gas are concentrated also; eleven countries possess 65% of proven world reserves. The three countries: Russia, Iran and Qatar accounting for over half of worldwide reserves of natural gas. The leading countries in the production of natural gas are formed Gas Exporting Countries Forum - GECF, and since 2001 held ten annual ministerial meetings. Russia has a leading position, and members are ten folowing countries: Algeria, Bolivia, Egypt, Equatorial Guinea, Iran, Libya, Nigeria, Qatar, Trinidad and Tobago, and Venezuela, and observer status have three countries: Kazakhstan, the Netherlands and Norway. The objectives of the establishment and functioning of the alliance are, briefly, to protect the interests of its members, as well as in the case of OPEC.

The West does not look favorably on the existence of the alliance, and is often called a gas cartel. According to critics, its very existence threatens the energy security of Western countries, and distort the free market energy in the world. The reminding of the Standard Oil and the decades-long practice of leading transnational oil corporations would indicate that the criticized market forms are long tima ago invented in the West, and that is literally a fight for control of the natural gas market, if its stock can not be controlled. Since Russia is not one of the Arab emirates, matters are further complicated for the interested countries and companies from the rest of the world. If the analysis of these relationships introduce elements of political organization and religion in these 11 countries, the causes of conflicting interests and possible conflicts are being expanded.

Since the prediction is uncertain and ungrateful, our understanding of the reasons for the formation of GECF, on the one hand, and concerns in the West, on the other, will not affect the real course of events: natural gas will be produced where there are reserves, and buyers will buy it from those countries that have it.

Although the future projects related to pipelines are currently most actual, it should be borne in mind that oil will maintain its high share in the structure of energy consumption, mainly due to its dominant role in transportation (sea, river, air and road transport) and the difficulty of using alternative energy sources.

3. RUSSIA

"Russia is a major player in the global energy markets. It is the world's largest natural gas producer and exporter and is one of the two biggest oil producers. Moscow also is the dominant gas and oil exporter to Europe and has substantially increased its hydrocarbon exports to Asian markets in recent years. Given historical ties and geographical proximity, Russia enjoys close energy ties with most of the Caspian Sea/CentralAsian states. Furthermore, Russian oil and gas companies are actively and aggressively pursuing partnerships with other national and international energy companies to explore and develop hydrocarbon deposits in Africa, the Middle East, Latin America and elsewhere. Finally, oil and gas revenues provide a large share of Russia's national income and the overall gross national products." However, it should be noted that Russia has the seventh volume of crude oil reserves in the world, especially the fact of their exhausting; in the conditions of current level of crude oil production, Russia's reserves could last 21 years, while the deadline of oil reserves exhausting in the Middle East is for over 80 years. Therefore, one can expect that Saudi Arabia and other Gulf countries remain dominant on the crude oil world market, while the dominant role in the global gas market to keep Russia.

There are two limiting factors for the dynamic development in the oil and gas sector. The first is the growth of domestic consumption, while the other is lack of the most modern technology for exploitation of oil and natural gas. As the largest and most promising Russian deposits are located in the extremely unfavorable geological and climatic areas, for their exploitation is a necessary modern equipment for offshore drilling and liquefies natural gas - LNG (or liquefied petrol gas - LPG). Such equipment have Western transnational energy corporations, and the foreign investment or joint projects will facilitate to overcome these problems. It remains to be seen how Russia will thrive in this business alone, and will allow greater foreign participation. However, in all, Russia's plans in the oil and gas in the next two decades does not lack ambition, as evidenced by baseline data from a new energy strategy. "The long-term energy strategy of Russia includes all-encompassing objectives, including the integration of oil exporting, processing, and sales."

In November 2009, Russia adopted the new energy strategy, which replaced the previous one of 2003, covering the period until 2030. In short, large investment are planned in the energy sector in current and next decade, exports growth to Asia, and development of oil and gas fields in East Siberia.

More specifically, an investment of U.S. \$ 625 billion in the oil sector to increase production by about 10% (reaching production of 530–535 million tons of crude oil in 2030, compared to 400 million tons in 2008). To achieve this goal, provided the growth of the oil fields in East Siberia to 18% (from 3% in 2008.) In the total production of crude oil, while, in quantity, exports remained the approximate current level (243 million tons exported in 2008 and provided 222–248 million tons in 2030). However, significant change is planned in the geographical

distribution of crude oil exports. Thus, Asia and Pacific region will increased its share of Russian exports from the current 6% to 22–25% in 2030. The main markets remain China, Japan and South Korea.

Ambitions in the gas sector are logically much higher. The planned total investment in the gas sector in the same period were U.S. \$565–590 billion, and of that amount as much as half should be invested in the transportation of natural gas (U.S. \$277–289 billion). Production in 2030 is projected at 885–940 billion m3 of gas per year (compared to 666 billion m3 in 2008), while exports should rise by 45–53% compared to 2008, and reach 349–368 billion m3 of natural gas. These projections foresee three significant changes: first, growth in exports of natural gas to Asian markets, which is expected to reach 19–20% of total gas exports; second, the growth of domestic demand and consumption by about 32–40% (from 457 to 605–641 billion m3 of natural gas); and third, a significant increase in the share of new gas fields in 38–39% of total production of natural gas, where the Yamal peninsula fields (north-west, the Arctic part of Siberia) in total production accounted even for 23–24% (Russia's richest reserves of natural gas).

3.1 Arctic Circle - potentials and problems of exploitation

The potentials of the Arctic zone in all the estimates have described as very significant, and their utilization is faced with solving a number of geopolitical, economic and climate problems. Several countries claim to Arctic territory: Russia, Norway, Denmark, USA and Canada. According to the UN Convention on the Law of the Sea (UNCLOS), these countries are entitled to exclusive economic zone that extends 200 nautical miles from their coasts. The problem is, however, that all these countries have a different interpretation of their rights in the Arctic, and have no consensus on the issue. It remains to see what solutions the future will bring.

Russia sees the western part of the Arctic as one of the largest future deposits of oil and natural gas. Estimates of reserves are going up to 8.2 million tons of hydrocarbons (natural gas production, for example, could reach 800 million m3 per day, more than half of Russia's overall daily production in 2007). Significant reserves have been discovered in the Barents Sea (Shtokman gas field and Prirazlomnoye oil field, both under control of Gazprom), Pechora Sea and Kara Sea (Rusanovskoye gas field and gas field Leningradskoye), Timan–Pechora basin, as well as lower oil and gas reserves in the coastal area near the Bering Sea. Currently of the above, oil and gas are produced only in Timan-Pechora basin . In the coming decades, exploitation of oil and natural gas from the Arctic Circle would have to grow, while the basin of the Volga and Ural reduced its share in total production.

In addition to geopolitical and security concerns that the Arctic sets to the interested parties, there are serious problems of technical and technological nature that Russia itself may be difficult to resolve. First is the harsh climate that difficult life and any economic activity. Lack of modern technology, industrial equipment and infrastructure complicate Russian plans. One might expect that

Russia will build in the future a network of partnerships for the purpose of exploitation of Arctic resources, and will be able to retain a dominant role in the Arctic zone. As a possible Russian partners in future projects in the Arctic can be three groups: first, European countries, of which Russia is a major supplier of natural gas; the other, the OPEC countries, which possess the technology and equipment; and third, transnational energy corporations, which already have proven results, the latest equipment and technology in the exploitation of offshore sites (BP, Royal Dutch Shell, ExxonMobil, Norsk Hydro, Statoil). It should be noted one of the advantages which Russia has in the Arctic zone: the port of Murmansk, which never freezes.

3.2 Basic characteristics of energy sector organization in Russia

As the nineties is characterized by privatization, the next decade was marked by deprivatization of energy sector, which began with the election of Vladimir Putin as Russian President 2000. Media images of Russian energy tycoons can easily lead to wrong impressions and conclusions, because throughout these two decades, as before, the Russian state played the major role in the energy sector.

The three largest state-owned companies in the energy sector are: Gazprom, Rosneft and Transneft. Gazprom is the world's largest gas company. Since the late nineties and the beginning of this century, Gazprom expanded and diversified its activities in: power systems, petrochemicals, banking and communications. Rosneft is the successor of Rosneftgaz, whose property is taken, and so established in 1993. After a period of poor business in midnineties, when it was transformed into a shareholding company, and especially since 1998, Rosneft records continual growth and expansion, so it is now Russia's largest oil company and one of the largest in the world. Transneft was established in 1992, as the successor to the earlier Transglavneft, and is a wholly state-owned pipeline and Russia's largest companies. This trio is the basis of current and future energy sector in Russia.

Russia earlier have a wide network of domestic oil and gas pipelines, in the Urals, the Volga and the Caspian basin. The disintegration of the USSR was left some parts of the previously unique network in the newly formed states. However, much of the oil and gas pipelines in neighboring countries is controlled by the Russian state-owned companies, or those of them have significant participation.

3.3 Baltic oil pipeline system

Baltic pipeline system is designed to transport crude oil from Western Siberia and Timan-Pechora fields to Primorsk port in the Gulf of Finland (near St. Petersburg). The three major export ports which supplies the Baltic oil pipeline system, with the dominant role of Transneft, are: Primorsk (Russia), Ventspils (Latvia) and Butinge (Lithuania).

3.4 Tayshet – Nakhodka oil pipeline

In 1994, Russian companies have proposed building a pipeline to link Siberian oil fields to China's northeastern regions. Initially, it was supposed to be the route from Angarsk oil fields in Siberia to Daqing in China. Japan has offered Russia at that time the total investment in infrastructure and development of oil fields of over U.S. \$ 7 billion, provided that the planned pipeline to Nakhodka extend. In late 2002, there have been changes to the route, and then decided to be Angarsk–Nakhodka oil pipeline. In March 2004, the Russians have rejected the Angarsk-Nakhodka project to use Tayshet–Nakhodka oil pipeline, from which one branch would go to Daqing, which is anticipated to be completed later this year. This option would allow Russia the expansion to the Pacific market while keeping Chinese market.

In April 2006, it was initiated the first phase of the pipeline route Tayshet—Skovorodino (Amurskaya Oblast), which was completed in late 2009. For now, oil is transported by rail to the new port Cosmino (where in December 2009 is opened a new oil terminal), and extension of the pipeline to the port of Skovorodino. Kozmino should be completed around the 2014. Otherwise, the transport capacity of the port Kozmino should then reach about one million barrels of oil per day, with potential increase to as much as 1.6 million barrels per day after one decade. Oil pipeline from Tayshet to Nakhotka has a total length of 4130 km, the estimated value of the investment is U.S. \$ 515 billion, and transportation capacity of 80 million tons of crude oil per year. Its primary purpose is exporting to Japan and the Pacific region, and additional exports to China.

3.5 Sakhalin LNG Project

In February 2009 started LNG project in Sakhalin. The project includes the following infrastructure: three offshore platforms, shore processing facilities, 300 km of offshore pipelines and 1600 km coastal pipelines, an oil export terminal, and LNG plant. Project is managed by Sakhalin Energy Investment Co., in which the own parts have the following four companies: Gazprom 50% + 1 share, Royal Dutch Shell PLC 27.5% - 1 share, Mitsui & Col. Ltd.. 12.5%, and Mitsubishi Corp.. 10%. The geographical distribution of LNG exports is among the partner companies agreed as follows: 65% of production is sold to Japan, North America 20% and 15% of South Korea. Significant gas fields in Eastern Siberia are: Kovykta gas condensate is field in Irkutsk Oblast, Talakan field and Chayandinskoye field in Yakutsk. Chayandinskoye field can supply the gas pipeline Chayandinskoye–Khabarovsk–Vladivostok.

Energy projects of Russian companies with China, the European Union and countries of Central Asia are processed in the following sections.

4. CHINA

In China, coal accounts for about 80% of primary energy use, and in the next two decades is estimated to be reduced and maintained at about 63% (of which two thirds will be used for electricity generation). According to the volume of established reserves of crude oil, China is the sixth in the world. The largest oil field in the exploitation is Daqing in northeast China, and new oil fields are Shengli and Bohai on the northwest coast.

"A net oil exporter until the early 1990s, China now ranks as the second largest importer of oil in the world, bringing in over 4 million barrels per day (b/d), or 48% of its oil demand from foreign sources in 2009." This level of import dependence, to which, above all, has lead very fast and dynamic economic growth, determine the China Energy Strategy, which seeks to diversify supply sources to reduce dependence on suppliers to the Near and Middle East and overseas tanker routes. Tanker transportation of oil from the region of the Near and Middle East, which covers about 48% of China's need for oil (2009), burdened by the many security risks. Increasing the share of Africa, Latin America, Russia, Kazakhstan and Myanmar in energy supplies, should raise the level of China's energy security in the future.

There are three planes on which China seeks to improve and enhance its energy security. The first is to strengthen capacities for the protection of sea routes. Another major activity is the investment of Chinese companies in the field of research, exploitation and processing of oil and gas abroad. Here we can mention the very dynamic Chinese investment activity in Africa. The third is the creation of strategic oil reserves. With the creation of strategic oil reserves, China has begun 2001 when they were meant three phases in the implementation of ambitious goals. With the first phase, which ended in 2009, provided the storage capacity of 103 million barrels of oil, while the second phase of the strategic reserve, which is anticipated to be completed later 2011, they were increased to 270 million barrels of oil. The third phase would be to raise the level of reserves of over 500 million barrels of oil.

"Since 2002, China's dependency on oil imports has reached 30–40 percent with more than 80 million tons of annual oil imports. As a rapid growing economy, energy shortage has become one of the mayor constraints of Cinese economic development. In the future, China's demands for oil and natural gas will be consistent and stable." China's longer-term activities to improve energy security go to more geographical directions, from Russia, across the countries of Central Asia, to the Middle East. Although the Sino-Japanese competition for Russian oil and gas led to changes and redirection of the original project at the expense of China, newertheless, it was realized one branch of the pipeline Tayshet-Nakhodka in the direction of China.

4.1 Skovorodino – Daqing oil pipeline

In early 2011 started to work branch of pipeline Tayshet–Nakhodka from Skovorodino to Daqing. The pipeline is 1,000 km long, through the Russian territory extends 72 km and 927 km through China. The plan is that it transported 15 million tons of crude oil per year in the period 2011–2030. Another route goes south, according to Myanmar, where China since the early military / security was involved. "Foreign direct investment (FDI) in Myanmar is overwhelmingly concentrated in gas, oil, hydroelectricity, and other energy and extractive industries." China's foreign direct investment in Myanmar in 2009 was the third in size (after Korea and Thailand), and amounted to U.S. \$ 136.7 million, while in 2008/2009 even totaled U.S. \$ 519.1 million and were dominant.

4.2 Kyaukpyu – Yunnan Province oil and gas pipelines

Even in early 2009 announced the commencement of construction of oil and gas pipelines from the Kyaukpyu port in Bay of Bengal through Myanmar to Southwest China, with a total length of over 1,200 miles (extending further into the interior of China, from Chongqing in Southwest China, across Guizhou Province, to the Yunnan Province). With all the difficulties of this project, the section from Myanmar began on 1 June 2010, and Chinese section in September 2010.

4.3 Shanxi Province - Beijing oil pipeline

In May 2009, the construction started in the third pipeline from northwest China's Shanxi Province to Beijing, 896 km long, was completed at the end of 2010, the pipeline was commissioned in the fourth January 2011. Its capacity is over 15 billion m3 of natural gas per year, while the transport capacities of two previously constructed on the same route of the pipeline is 20 billion m3 of natural gas per year. These three pipeline together to supply Beijing and other areas in the Bohai region, including Shandong, Tianjin and Hebei.

4.4 Kazakstan – China gas pipeline

Pipeline from Kazakhstan to China in the first phase was completed in 2009, while its second phase began at the end of 2010. Length of the second phase of the pipeline is 1475 km, and provided transport capacity is 10 billion m3 of natural gas per year. China buys natural gas in the form of LNG from Turkmenistan, and its participation in a pipeline project from Iran to India is at present uncertain.

5. EUROPEAN UNION

The structure of energy consumption in the European Union is as follows: the 37% waste oil, natural gas 24%, 18% solid fuels, nuclear reactors 14%, alternative energy sources 7%, so the dominant role of fossil fuels have a share of 79%. It is predict that by 2020 the import dependence for oil to be 92–93%, and for natural gas 71–73%. 152 nuclear reactors in 27 countries of the European Union provides about a third of electricity production. "In many European countries, the production of electricity from natural gas is the main market for gas." Although the share of alternative, ie. renewable energy sources are still modest, they can expect dynamic growth in this decade (wind, solar, hydro, tidal, geothermal, biomass).

Council of the European Union in March 2007 adopted a new energy policy for Europe. According to their forecasts, Europe's energy dependence will increase, so that 2030 about 84% natural gas and 91% of the oil will coming from imports. Therefore, very ambitious targets for the period to 2020 were set: first, increasing energy efficiency by 20%; second, the growth of the renewable energy to 20%; and third, reduce greenhouse gas emissions by 30%. The European Union's need for importing natural gas satisfies the following sources of supply: 40–50% in Russia, about 11% from Algeria, and 21% from Norway. "Norway and the UK—the North Sea's largest producers—together account for 5.7 per cent of global supplies. Within Europe, the two countries hold the vast majority of oil and gas resources, accounting for 84 per cent of the continent's production, and meet over 25 per cent of total oil consumption needs."

In addition to these suppliers, and gas is imported from Libya, Nigeria, Egypt and the Middle East . Now about 90% of natural gas imports into the EU comes via pipelines, and liquefied natural gas or oil - LNG accounts for only 10%. However, the predicted increase its stake to 32% by 2030. LNG imports are used most countries of Southern Europe: Spain, Portugal, France and Greece, but it is expected significant growth in Italy, Belgium and the UK. In addition to oil and gas as energy sources, European countries are significant producers and consumers of electricity. Among them, the greatest production from nuclear power plants is France, and some of the important new members: Romania, Bulgaria and Hungary. In the pan-European infrastructure networks exists the power grid, which are included in the candidate countries and countries in the accession process. In this area, is a growing interdependence, and cooperation is satisfactory.

6. RUSSIA AND EUROPEAN UNION

Russia (then USSR) was first started selling natural gas to Austria in 1968, and since 1973 to the West Germany, but later joined as customers and other Western European countries. As regards to the geographical distribution of

Russian gas exports to the capital and largest markets, it was 50–70 billion m3 in the Asian market in 2008, and to Europe was 157 billion m3 of natural gas. "Russia is by far the European Union's (EU) most important gas partner. The country's gas company, Gazprom, provides the EU with 40 per cent of its natural gas imports, which account for 57.6 per cent of the company's gas exports. "Dependence on imported Russian natural gas is different in the countries of the European Union, and was, for example, in 2009: 43.6% in Germany, 22% in France, 29% in Italy, 71.6% in Austria, 80% in Poland, the Czech Republic 77%, Romania 77.8%, in Finland, Estonia, Lithuania, and Bulgaria 100%, but 0% in the UK, Belgium, Spain and Portugal.

So far, the European Union is pursuing its goals of liberalization of the gas industry, creating a single market and ensuring security of supply. At the same time, Russia, as the main supplier of the European Union, sought to consolidate its position and expand its sales by encouraging Gazprom to take over the property in the downstream European gas chain. Liberalisation of the gas market in the European Union began the implementation of gas directive of 1998 and 2003, and then the third energy package in 2009. The aim of the liberalization of this market is its degree of monopolization and increase of competition among providers, and delivered through the disintegration of national monopolies and allowing free access to parts of this market, where gas transmission and distribution have natural monopoly characteristics. This seeks to prevent vertical integration on the line: manufacturer - supplier - transporter - consumers. Even the potential of new companies in this market, not from the European Union, requires that they must show that you do not threaten the energy security of the European Union (so-called third country clause).

In the short, Gazprom's response to the increased risks to which the gas market liberalization led consisted in signing long term contracts, increasing sales, assuming ownership or the establishment of branches in the chain of supply of natural gas in the European Union. In the medium and longer term, it is diversification of transport and sales channels, and opening new markets. Although long-term contracts are still the main way of buying and selling gas in the European Union, they are to some extent in conflict with the goals of liberalization and the creation of a single gas market. However, it should be noted that long-term supply contracts allow for the expansion or opening and exploitation of new gas and oil fields, such as Yamal.

"The Energy Charter, the first multilateral treaty designed to provide a legal framework for cooperation in energy matters, establishes series of rules governing trade, transit and investment aimed at liberalising investments and energy flows." The principles of free access to sources of third party companies and transit networks, promoted in the Energy Charter Treaty, certainly not in line with the strategy of energy sector development in Russia. Given the generally high level of energy dependence on Russia the European Union, both present and future, and general development strategy of Russia since 2000, it could be reasonably argued that the implementation of these principles to the Russian space will be quite limited. Realistic to expect the continued application of the principle of reciprocity and bilateral arrangements between the companies, which is a key consideration in the Russian sector.

Although Russia and the EU (at least a majority of) the natural trading partners in the supply of natural gas, there are two tendencies in their relations, which have different impacts and practical 'energy and trade policies of individual EU member states. The first is reflected in the widening and construction of new transport channel, directly from Russia to EU countries, while the second is characterized by an effort of the European Union to participate in projects that would ensure its energy supply from other sources, primarily from the Caspian region. The result of such efforts are ongoing or planned, and new energy projects.

There are two main existing pipeline to transport natural gas from Russia to Europe: Druzhba through Ukraine, which accounts for about 80%, and Yamal through Belarus, which accounts for about 20%. Gazprom has control over the gas transit companies in Ukraine (Naftogaz) and Belarus (Beltrangas), but also a significant share in the ownership of such firms in other countries: Germany (50% in Wingas), the Baltic countries, Hungary and Slovakia. The problems that emerge constantly in transit through the two pipelines, in particular through the Ukraine, to a large extent, have questioned the stability of supply and energy security of the European Union and Russia reduced income, or, at least, so unstable. Neither the transport of Russian gas through Belarus is no longer stable as before, and maybe that promised Russia's help in solving the economic problems that Belarus is stuck. Business activities, however, are of strategic character for both partners and their scope and value so great that in the future have to ensure the stability of Russian gas deliveries to the European Union. New pipelines should be a solution to these problems.

6.1 North Stream gas pipeline

April, 10 2010, the ceremony marked the start of construction of the Nord Stream gas pipeline in Vyborg, Russia's Baltic town near the border with Finland. The pipeline will go to the bottom of the Baltic Sea from Vyborg on the Russian coast of the Baltic Sea to Greifswald in the German coast. Length of the pipeline will be 1223 km, capacity of 27.5 billion m3 of gas per year in the first phase by 2011, which would be doubled to 55 billion m3 to build another line by 2012. The project value is € 7.4 billion (according to some estimates, the € 8.8 billion), of which approximately 30% funded by a consortium of South Stream, and the rest would be provided from loans. In the consortium equity, Gazprom has a 51% share, E.ON Ruhrgas AG 15.5%, Wintershall Holding AG 15.5%, NV. Nederlandse Gasunie 9%, GDF-Suez 9%. The main project partners are Russia and Germany, which provided support to three countries: Sweden, Finland and the Netherlands. This is the first gas pipeline connecting Russia directly with the market in Western Europe.

6.2 South Stream gas pipeline

South Stream is a joint project of two energy corporations: Italy's ENI and Russia's Gazprom, Gazprom with a 51% share and 49% of ENI. Announced the

possibility of Electricité de France to join the project and take 20% down payment. It is anticipated that the pipeline goes under the Black Sea from Russia to Bulgaria (about 900 miles), and the Bulgarian coast of the mainland. The project includes the following countries: Austria, Slovenia, Croatia, Hungary, Serbia, Bulgaria and Greece. Estimated construction period is five years, from 2011 by 2015, for about 63 billion m3 of gas per year, and estimated project cost around € 20 billion. The planned route of the pipeline through Serbia should be 450 km, larger than the capacity of 36–41 billion m3 of gas per year, and the value of that part of the pipeline at least € 700 million. In early April 2010. it was announced the possibility that the South Stream project to get the status of trans-European networks, which would facilitate the financing of the project.

The efforts of the European Union to provide a supply of natural gas from sources other than Russia was to be partly solved through the implementation of Nabucco project.

6.3 Nabucco gas pipeline

A consortium of companies for the construction of Nabucco are: Austria's OMV, Hungary's MOL, Turkey's Botas, Bulgaria's Bulgargaz and Romanian Transgaz. (In May 2009, joined the project: Azerbaijan, Georgia and Egypt). It is planned that the pipeline transports natural gas from the Caspian Sea region, mainly Azerbaijan via Turkey, Bulgaria, Romania, Hungary and Austria and other EU countries. The predicted length of the pipeline is over 3,300 kilometers and investment of around \in 5 billion. This pipeline should have the capacity to transport 31 billion m3 of gas per year.

Predictions about the future of Nabucco is not optimistic, and the great influence they have an agreement that is in 2007 Gazprom has signed with major producers from Kazakhstan and Turkmenistan. It envisages the construction of a pipeline that would run through these two countries and ended up in Russia. The deadline for construction is 2012, and pipeline capacity 20 m3 of gas per year. The buyer of natural gas would be Gazprom. With this move, Gazprom is largely brought into question the fate of Nabucco, endangered Transcaspian pipeline and prevented construction of alternative routes (China, Iran and the Caspian Sea).

6.4 Blue Stream gas pipeline

Blue Stream gas pipeline is built jointly by Gazprom and Italian ENI. It transports gas under the Black Sea to Ankara, and is planned to be extended to the Turkish port of Çeyhan. He began working in December 2002. Part of the gas is re-exported to Europe through Turkey–Greece interconnection, while another route planned to be completed in Italy.

6.5 Paneuropean oil pipeline

The predicted length of the Pan-European oil pipeline is 1230 km, a section that would pass through Serbia should be 195 km. Its beginning was in Constanta, Romania, went to the Novi Sad to the existing pipeline to Croatia, and finally connecting with the transalpine oil pipeline in Trieste, Italy. The planned pipeline capacity is 60 million tons per year. It should also be mentioned oil pipeline from Burgas through Macedonia to the Albanian Adriatic coast, and the pipeline from the Black to the Aegean Sea (Burgas-Alexandroupolis), which avoids the passage of tankers through the Bosporus and Dardanelles.

7. CENTRAL ASIA AND MIDDLE EAST

The Middle East and Central Asia are very rich in oil and natural gas. Unfortunately, political instability and unfavorable international position threatening their development prospects, which they allow these natural resources. Iran is under international sanctions and in constant hostility with the United States, while in Central Asia conflict the interests of Russia, Turkey, China and the United States. However, in this region exist or are in progress very important energy projects.

7.1 Iran - Pakistan – India gas pipeline

The pipeline Iran - Pakistan - India has a long history. The original idea of its construction came from a Pakistani engineer in the mid fifties. Subsequent negotiations have been going through various phases, greatly burdened by the political and safety issues. The project is very ambitious concepted, so that the total length of gas pipeline planned to 2775 km, and transportation capacity of 55 billion m3 of natural gas per year. It is anticipated that it begins from the South Pars field in Iran (the largest gas field in the world), and runs 1,100 km Iranian territory. He would continue through Pakistani territory to Deli. In spring 2010, Iran has completed the construction of about 1,000 km gas pipeline in its territory, and the rest is provided to be completed later this year. Iran in 2008 proposed inclusion of China in this project, and in the same year India withdrew from these negotiations. What the future may be expected from this pipeline, away from Pakistan? Will the dynamic development of India's economy to force their companies to actively participate in this project, or it may turn to Chinese territory, it remains to be seen in the near future.

7.2 Turkmenistan – Iran gas pipeline

Start of the second gas pipeline from Turkmenistan to Iran in 2010. made it possible to transport 20 billion natural gas per year to this route. In this way, Turkmenistan reduced its dependence on Russian transport companies.

7.3 Turkmenistan - Afganistan - Pakistan - India gas pipeline

The pipeline Turkmenistan - Afghanistan - Pakistan - India, about 727 km passing through Afghanistan, and 800 km through Pakistan, was expected to include Chinese companies in the consortium for its construction. However, for political reasons, India is opposed to Chinese participation, arguing that China could increase its role in the arbitrary constant Pakistani-Indian conflict. For its own reasons, the United States is treated this gas pipeline as a strategic one, in an effort to reduce Russia's influence, here and Chinese, and their position close to the Indian.

7.4 Caspian oil pipeline

Caspian oil pipeline, the length of 1510 km, for which construction is a consortium formed in 1992, with regular work started only in April 2003 (first phase). His start in the Tengiz oil field in Western Kazakhstan and end in the Russian Black Sea port of Novorossiysk. This was once the largest investment with foreign partners. So far in the future even more, a very significant means of exploitation of this oil pipeline, on several grounds will reap the Russian side.

The ambitions of Western energetic transnational corporations have come to the fore in their investment activities related to Georgia. The Baku-Tbilisi-Çeyhan oil pipeline and Baku-Tbilisi-Erzurum, who built the American and European companies (BP, Total, Unocal, Statoil, ENI, Turkiye Petroleum), BP control both, are the result of these activities. Russian support for Abkhazia and South Ossetia, and generally unstable security positions of Georgia, reduced the original expectations of the Western supply routes.

South Korea is largest foreign investor in Uzbekistan, where there are about 200,000 ethnic Koreans who were deported to the 1937 from the Soviet Far East.

Earlier this year, Iran announced its intention to build a pipeline along the route Iran - Iraq - Syria.

8. STRATEGIC CHARACTER OF ENERGY AND SECURITY

By their very nature, energy is of strategic character for each country. All new energy projects in the area of Eurasia have five main drivers: first, the fight for long-term position on the part of the international energy market between Russia and the largest oil transnational corporations; the other, the need for stable delivery of energy channels in the European Union from the point of view of Russia as a producer and retailer; and third, Russia's attempt to alter the geographic distribution of its energy exports toward China and the Pacific region; fourth, EU efforts to diversify sources of supply channels and provide energy stability; and fifth, China's growing demand for energy, and its strategy of diversification of supply sources and routes.

From a purely economic standpoint, it's much cheaper to have one gas pipeline or high-capacity but more for transport between the two destinations, due to cost savings made by economies of scale. Capital costs of oil and gas pipelines are directly dependent on the diameter and length of the pipeline . Pipelines generally characterized by large capital investment and high fixed costs, while operating expenses were low because of the large economies of scale, and are estimated at 4–7% of capital costs.

Since the issue is not just an economic one, hence the new energy projects. Due to the high capital intensity and the high volume of technical economies of scale, oil and pipelines have the characteristics of natural monopolies. Although the planned growth of trade and transport of LNG, the picture will not be much different, because the cost aspect, it is not cost-effective maritime transport of LNG by tankers at distances shorter than 3,000 miles. Control of trade and transportation routes of energy today resembles the control of maritime routes in the past.

Another aspect of the strategic and security nature of energy is reflected in the way its trade is regulated: it is usually long-term contracts. Long term contracts are usually concluded for periods of 25–30 years, while one part of them are concluded for short periods of 10–15 years. It is estimated, in the discussion for or against long-term contracts, that they represent a barrier to entry of new supplier countries. In this way, they prevent competition in the oil and gas markets. Two factors that contribute to its strength are: construction of new oil and gas pipelines and increase in the number of LNG terminals. Long term contracts are certainly a good trait predictability, stability and energy security, both for buyers and for sellers. And now apparent that both sides match. However, things in the future may not be the same as today. Long-term analysis showed the rapid growth in demand for gas in the U.S. and the Pacific, under the dominant influence of the Chinese economy. "The emergence of an Asian market with chin up front, and the possibility of LNG export, makes Russia free from its dependence on gas exports to Western Europe."

As for the stability of regular consumption, and in cases of slowdown and possible energy crisis, one of the important factors are the energy security of energy stocks. "Stocks are expensive to carry, and the private sector will not be keen to hold them, and the requirement to hold precautionary stocks will have to be Mandated. In the United States and Japan, huge volumes of oil stocks are held by government."

9. CONCLUSION

The implication is a general conclusion with regard to crude oil and natural gas in Europe and Asia, which is diversification and transportation routes or sources of supply, and their objective is the stability of supply, or increase the degree of energy security. This image can be interpreted differently, as a struggle for dominance in the oil and gas; one intend to keep or increase, while others are trying to reduce. These would be the main drivers of energy projects in the

territory of Eurasia. Although the implementation of these projects are often burdened with conflicting interests on a global scale, they score a certain balance in the medium term, and thus contribute to the total energy and security in this large area.

Without going into detailed exposition analysis of the impact of changes in energy prices on the GDP of a country, or globally, it is without any doubt, that the rate on the very great importance, as evidenced by historical examples of energy crisis in the world. In doing so, the greatest impact had of crude oil price changes. After a drastic reduction in the longer-term oil prices are not in appearance, generally we can conclude that crude oil prices leading to reduced availability of one of the basic inputs, thus reducing the possibilities of production and, consequently, consumption, investment and disposable income. Specific impacts are numerous, and the subject of detailed analysis and forecasts. From the point of our analysis, instability in energy prices and the instability of flows of energy supply is one of the most important factors of (in)stability of the national economy, and thus of the energy and overal security of the country and the region.

The first impression of a network of existing and planned oil and gas pipelines, as well as ports and export terminals, traditional and emerging, in the territory of Russia and neighboring countries, can easily create a confusing picture. However, since it is a well-established transportation routes, and strategic national projects, it is evident that there is no improvisation. Many initially planned projects are changed over time, some are giving up for a shorter or longer time, but those that are under construction or already implemented are in favor of the conclusion that the Russian energy sector has and will have the strategic development significance.

It is not always easy to understand the historical decisions and actions of great powers, the interests behind them or drive them, but they have a critical point of their calculations of costs and alternatives of the same expenditure of funds.

Relationships among the main actors should be seen as a partnership, or opposed, even hostile, and we made a mistake anywhere. Notable is the defense of self-interest and by defeating competing projects at the expense of other countries, which in turn can be partners in some joint projects.

If we start from the strategic nature of energy, both for the country's producers and consumers and importers, the enormous value of energy projects, the time required for their construction and putting into operation, the interdependence of countries and regions in terms of energy, then it is reasonable to conclude that a new and planned energy projects in the area of Eurasia will survive all the difficulties of its realization. Despite the competitive position of individual energy projects, the fact is that they basically serve the purpose for which they are made, and it is the exploitation of new sources of energy and transport. With putting into operation of any new energy project, in whole or some of its phases, increases the stability of energy supply, and thus the energy security of countries of destination, on the one hand, and the inflow of income for the exporting country.

In terms of power relations among the major countries and groups, the picture will not change significantly in the foreseeable future. The reason is simple: oil and gas are not made in factories than to exploit from the soil and only where there are. It can be expected that Russia and China to achieve most of its energy strategy, and that there will be changes in the significance of individual regions rich in energy resources and supply routes. For now, the influence of Iran and Central Asian countries is not adequate to their energy potential. Persian Gulf so far remained immune to the political changes in Arab countries of North Africa, with the undiminished importance in the production of oil and natural gas. The big question is until when will this situation last, perhaps the same as the question of indigenous character of revolt in North Africa. Western European countries can strengthen their influence through participation in energy projects with the producing countries, and thus increase their energy and overall safety.

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