

ENERGY SECURITY AND NATIONAL SOVEREIGNTY

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This study examines the growing expansion of Russian companies on the EU energy market which stems less from business logic than from the energy sector strategy implemented by the Russian Federation. It looks at the preferred directions of future expansion, and capital involvement; the economic and political consequences for specific EU member states; and a case analysis of specific EU member states. Suggestions for potential courses of action by the EU are proposed.

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Gazprom is a key element in the system of the country's energy security and its export potential. Equally important, it is a powerful lever of Russia's economic and political influence in the world.

VLADIMIR PUTIN

Speech at a Gala Meeting to Mark the 10th Anniversary of Gazprom, 14th February 2003



1. INTRODUCTION

During a gas surplus, Gazprom often loses its competitive edge in relation to other suppliers to Europe. In a gas sellers' market, the Russian company uses its large gas reserves and highly-developed infrastructure to strengthen its market position and exert an impact on the most gas-dependent states.

In 2008 and 2009, the oversupply of natural gas on the global market revealed that Gazprom was less competitive in Europe when compared with other European suppliers and LNG. Thus, a situation of global deficit in the supply of natural gas is in the vital interest of the Russian company (as an instrument of political influence for the Russian Federation). In such a scenario, the Russian Federation – which not only has the richest proven natural gas reserves, but also sells natural gas under long term contracts with prices indexed to the oil price – gains a powerful hold over countries which are dependent on the importation of natural gas.

In the modern world, energy self-sufficiency is closely linked with the political and economic sovereignty of individual countries. This link is even stronger in Europe, since it borders with the largest natural gas supplier – the Russian Federation, which has identified natural gas and crude oil as an instrument of strengthening its global influence in its official political strategy.

Examining the impact of the Kremlin's activities and those of the largest Russian company on the decisions made by individual member states or the EU itself in the energy sector, it is clear that – at least over the last decade – the policy of the Russian Federation has been very reflective and consistent in the pursuit of this objective.

The reactions of Gazprom and the Kremlin – to the information on the potential availability of shale gas in Europe, to the changes on the LNG market, to the price revolution in the natural gas market in the Atlantic basin, and finally to the provisions of the EU Third Internal Energy Market Package which is undergoing implementation in EU member states – can be cited as an example and have a common denominator: the hidden desire to increase the demand for natural gas in Europe and simultaneously reduce the competitive, indigenous and unconventional natural gas production and the availability of alternative routes for the importation of gas supplies in Europe.

Of greater concern still is the impression that not all decision-makers in the EU are aware of the long-term consequences of their decisions on energy and climate protection. This paper reveals certain relationships between events and decisions taken and their impact on the economy; and furthermore, their impact on the political situation in Europe, since one of the largest energy suppliers to Europe views these supplies not solely in terms of economic but also of political interests.



2. THE ENERGY STRATEGY OF THE RUSSIAN FEDERATION

2.1. THE MAIN STRATEGIC GOALS OF THE RUSSIAN FEDERATION

The energy policy of the Russian Federation is described in two documents: the *Energy Strategy of Russia for the period up to 2020* and the *Energy Strategy of Russia for the period up to 2030*. The first document was approved by Decree No.1234-p dated August 28, 2003, issued by the Government of the Russian Federation. The second was approved by Decree N° 1715-r of the Government of the Russian Federation dated 13 November 2009.

The most interesting section of these documents defines the external energy policy objectives of the Russian Federation. This is to shift the Russian Federation from the role of supplier of resources to the role of substantive member of the global energy market.

On page 71 of the *Energy Strategy of Russia for the period up to 2020* Section 3, it is stated:

*"[the] strategic objectives of the development of gas industry (...) [are] to protect the political interests of Russia in Europe and neighbouring countries, as well as in the Asian region and Pacific"*¹.

In the *Energy Strategy of Russia for the period up to 2030* there is a chapter entitled *Foreign Energy Policy* in which the following is stated:

"The strategic objective of the foreign energy policy is the maximum efficient use of the Russian energy potential for full-scale integration into the world energy market, enhancement of positions thereon and gaining the highest possible profit for the national economy."

*"The global nature of energy problems, their rising politicisation, as well as objective importance of the Russian fuel and energy complex in the world energy sector predetermine the important role of the foreign energy policy of the country"*².

These quotes show the growing connection between the foreign and the export policy of the Russian Federation, mainly in the natural gas sector. This policy is developed by the Kremlin using Russian energy companies as an instrument, and the most powerful of these is Gazprom (according to Vladimir Putin's words from his speech at the 10th Anniversary of this company quoted in the motto).

2.4. THE MAIN RUSSIAN ACTIVITIES IN EUROPE ARISING FROM THE ENERGY STRATEGY

2.4.1. The Gas sector

In July 2006, the Russian Duma (the lower chamber of parliament) approved a bill that granted Gazprom a monopoly over gas exports. Since 2006 Gazprom is the only company in Russian Federation that is able to sell natural gas abroad, this law allowed Gazprom to take control over domestic production and natural gas exported by Turkmenistan, Kazakhstan or Azerbaijan.

¹ The *Energy Strategy of Russia for the period up to 2020*, p. 71

² The *Energy Strategy of Russia for the period up to 2030*, p. 55



Almost all European economies which use natural gas are highly dependent on imports. From the very beginning the main sources of natural gas supplied to Europe came from so called super-giant gas fields³ such as the Dutch Groningen, Norwegian Troll, Algerian Hassi'R Mel and Russian Yamburg, Urengoy, Medvezhye and Zapolyaroye. In terms of individual companies, the Russian Gazprom is one of the largest suppliers with an approximate share of 26% of the European market.

Table: Share of European gas market (import) by company

| Company | Share of European market, %* | | | |
|--|------------------------------|-------------|-------------|-------------|
| | 2006 | 2007 | 2008 | 2009 |
| Gazprom (with Turkey and Switzerland) | 23.9 | 23.9 | 28.4 | 26.3 |
| StatoilHydro | 9.7 | 12.1 | 17.5 | 18.5 |
| Sonatrach | 9.8 | 9 | 9.9 | 9.6 |
| GasTerra | 8.9 | 8.6 | 13.4 | 9.1 |
| Qatargas | 0.9 | 1.2 | 1.4 | 3.5 |

**without CIS and Baltic states*

Source: "Vedomosti", 18.08.2010 after A.Konoplyanik, Gas Forum 2010, Warsaw 13-14.09.2010

Following the development of the European gas market, all the leading producers and gas exporters wished to maximise and optimise their income. Since the beginning of trade in natural gas, its import and export has been based on long-term contracts with the take-or-pay obligation (ToP). More than 250 bcm/year of natural gas is imported in this way⁴. Since the recent world financial crisis, and following LNG expansions, efforts to change this fixed gas trading arrangement have been observed.

However, when describing the energy strategy of the Russian Federation and Gazprom in the European gas market, the historical differences in the development of the gas market between the European countries from either side of the Iron Curtain should not be ignored.

Development of the gas market in Europe

The development of the natural gas industry in Western Europe began with the discovery of the super-giant gas field Groningen⁵ in the Netherlands in 1959 (and its exploitation from 1963). A few years later, Europe was also buying natural gas from the Russian, Norwegian and Algerian gas fields. There was also a parallel development of the gas trading model in export and import contract price formulae.

From the very beginning, the Groningen gas export contracts served as a point of reference for other gas producing countries. Natural gas was sold on a long term basis with minimum pay based on "market value" pricing. Since there was no gas market, the concept of market value was created by the Dutch government together with Esso and Shell⁶. It was based on the replacement value of alternatives to natural gas as a

³ *Putting a price on energy*, Energy Charter Secretariat, 2007, p. 165

⁴ *Id.* p. 153

⁵ <http://www.geoexpro.com/history/groningen/>

⁶ See *Putting price...*, p. 143



source of energy for a particular sector (in the case of households this was light fuel oil, in case of industry heavy fuel oil). The price of natural gas has been pegged mainly to heavy and light fuel oil for almost four decades.

Most of the export of Russian natural gas to Western countries was based on the Groningen model. From the very beginning of the development of the natural gas market on the western side of the Iron Curtain, these countries purchased Russian gas according to actual market conditions (similar to Norwegian or Dutch supplies).

But in the Soviet Union and its COMECON partners the gas trading arrangement was based on a completely different pattern.

The development of the COMECON gas industry was subject to central planning. Natural gas was delivered to those countries in exchange for their goods, labour force, services and help in developing the Soviet gas pipeline transport system and gas fields on a barter basis. The entire Soviet gas upstream and midstream industry was created as a whole, in a complementary system which supplied natural gas to the Soviet Union and COMECON economies in East Europe with export of surpluses to Western Europe. Once the Ukraine, Belarus, Slovakia and the Czech Republic became transit countries they also received natural gas as compensation for the transit of gas to the West⁷.

This model started to change in Eastern Europe in 1990's. Today, most of long term contracts in Europe are based on the Groningen model.

Differences derived from Iron Curtain

These historical details enable a better understanding of the different approach in the contemporary Gazprom natural gas export strategy towards the EU 15, the Central European and the former Soviet Union countries. All of the EU 15 and some Central European countries (without the Baltic states) are referred to as the 'far abroad' economies in Gazprom's typology. The other group are the former Soviet Union states (FSU)⁸.

Because the EU 15 gas markets have been developing since late 1960's in parallel with the development of the supply chain from Norway, Algeria, the Netherlands and Russia, their economies are well diversified today in terms of direct access to all the continental European natural gas producers (NCS, Jamal Peninsula) – and, thanks to LNG – to a variety of different production fields world-wide such as the North Field in Qatar or Hassi R'Mel in Algeria⁹.

Meanwhile, the majority of Central European countries have practically no direct access to any gas producers other than those in Russia. The main gas transport pipelines supplying this region with natural gas and the upstream infrastructure in the Russian Federation are inherited from the regime of the Soviet Union. There are no other transport routes through which it would be possible to supply significant amounts of gas to the former COMECON states. In the 21st century, when the European market is in the process of liberalisation, there is still no price benchmark for the gas market in Eastern Europe.

⁷ Id. 159

⁸ Gazprom Annual Report 2009

⁹ To see more crucial gas fields, Vide *Global Natural Gas Reserves – A Heuristic Viewpoint*, MEES – Middle East Economic Survey, Vol. 49 - No. 11, March 13, 2006 (Part 1); Vol. 51 - No. 12, March 20, 2006 (Part 2).



Moreover, all gas infrastructure projects which could break the monopoly position of Gazprom in this region have not yet come to fruition¹⁰.

EU-15 countries

There is a clear distinction in the way that Gazprom treats different European countries. A different approach by Gazprom is evident in the marketing of natural gas in the so called 'far abroad' and the FSU countries. More precisely, in the gas strategy of the Russian Federation it is possible to distinguish three groups of countries: the EU15 plus Turkey, the former COMECON and the FSU countries.

Four in the first group (Germany, Italy, France and Turkey) are the main Gazprom natural gas customers not only in Europe but among all foreign Gazprom clients. According to the Russian company data for 2008 these four economies imported almost 97 bcm of natural gas, and in 2009 this was almost 83 bcm¹¹. The United Kingdom is also an important potential market from Gazprom's point of view since its economy is strongly dependent on natural gas¹², but the indigenous production of natural gas is steadily decreasing.

The main characteristics of the Russian energy strategy towards the 'far abroad' is to maintain the existing long term contracts based on the ToP obligation and a price formula that is pegged to the oil products¹³. Moreover, Gazprom has attempted to gain direct access to the distribution market in these countries. The Russian company used its strong position – during new negotiations and renegotiation of old contracts in 2006-2008 – and managed to gain access to end consumers in some European distribution markets. Gazprom is already present on the German and British markets¹⁴. Since 2007, Gazprom affiliates such as GWH and Centrex, GMT Italia, GMT France are able to sell natural gas directly to the retail market in Austria, Italy and France respectively.

Moreover, the Russian company was also able to prolong existing long term contracts with E.On, Gaz de France and ENI before the world financial crisis started. Having long term export contracts pegged to oil price index provides Gazprom with high and stable revenues. Thus Gazprom's strategy is to keep European economies dependent on natural gas in general, Russian supplies in particular and hopefully to increase such dependence.

Another arm of this strategy is to acquire gas transport and distribution infrastructure by buying either whole companies or shares in gas transport joint ventures. A good example is the unsuccessful acquisition of British Centrica and the successful acquisition of Interconnector (see: *Acquisitions*).

The Main obstacles for Gazprom in EU15

Despite its apparent continued success, achievement of the Russian Federation's main strategic goals in the "far abroad" sector should prove difficult. The EU15 markets are well diversified (as referred to above) and have been developing according to market incentives from the very beginning. Energy companies operating on the Western European markets have strong capitalisation, good market penetration and are more or less equal partners in negotiations with Gazprom.

¹⁰ Among others: two Polish efforts to create direct connection to the Norwegian Continental Shelf (so called Baltic Pipe project), Nabucco Pipeline, Adria LNG

¹¹ Gazprom Annual Report 2009, p. 62

¹² BP Statistical Review of World Energy 2010

¹³ See Gazprom Annual Report 2009, p. 63

¹⁴ <http://www.gazprom.com/press/news/2009/june/article66793/>



This was most evident at the time of the world financial crisis, when natural gas demand in Europe fell and new opportunities for cheap supplies became available¹⁵. Companies such as E.On, GdF, ENI and Botas were able to renegotiate their long term contracts with Gazprom simply because of the changing market conditions. For example E.On and Botas downgraded their ToP from 90% to 75% of contracted volumes, ENI from 85% to 60%¹⁶. Moreover, E.On, GdF and ENI could purchase gas above the minimum ToP obligation at current spot prices and managed to add to their price formula a gas-to-gas competition component¹⁷. Such Gazprom concessions were not available to any of the former COMECON or FSU companies.

Another factor which hampers the implementation of Gazprom's strategy in the EU 15 is the liberalisation of the gas market. This occurs at two levels: the regulatory framework developed by the European Commission and Parliament – the Third Internal Energy Market Package and the new approach to the gas pricing mechanism (gas-to-gas), which appeared with the global gas surplus in 2008, in parallel with the financial crisis and the shale gas revolution.

Gazprom's advantages

There are also factors which strengthen Gazprom's influence on the EU economy and thus the political impact of the Russian Federation in Europe. Most of them are based on specific political decisions among EU member states in Brussels and regard the increasing consumption of natural gas in the EU for example, the switching from coal to gas by the power generation industry. The carbon reduction policy is among the factors of greatest importance (described below in *Carbon reduction*). Another factor (strongly connected with the previous) is the ongoing EU support of renewable sources of power production, especially wind-power (see: *Renewables*).

Central European countries

The second group of countries subjected to a different approach in the Gazprom strategy include Poland, the Czech Republic, Slovakia, Hungary, Bulgaria and to a lesser extent Romania and Eastern Germany. These are former COMECON states and today they constitute the main transit countries for the export of Russian natural gas.

Aside from efforts to gain access to transit and distribution assets in these countries, Gazprom attempts to maintain its monopoly position as a gas supplier. Since almost all existing gas infrastructure in the former COMECON countries was dedicated to sending natural gas solely in an East-West direction, it is much easier to implement the Gazprom strategy in this region.

Most of the countries in this group have no direct access to gas supplies other than Russian gas supplies. Poland and Romania have their own indigenous gas production sources covering about 30% and 40% of their demand respectively. The Czech Republic has indirect access to Norwegian natural gas and about 20% of it is received through the German gas grid.

With no access or access with limited infrastructure capacity to other natural gas production sources, the above states are dependent on Gazprom supplies with no price benchmarks similar to the EU15 countries. They were not able to profit from cheaper spot gas prices during 2008-2010.

¹⁵ Relatively cheap LNG spot market, natural gas trading at National Balancing Point

¹⁶ www.konoplyanik.ru

¹⁷ 15% based on a basket of European gas hubs, see also www.konoplyanik.ru



After the fall of the Berlin Wall, the former COMECON states had the opportunity to develop their own energy policies, create alternative routes and to diversify their natural gas supplies. However, in 2011 there is still practically no such infrastructure and in the event of any disturbance in gas supply (2004, 2006, 2009), their economies suffer from the lack of alternative gas transport infrastructure.

Instead of constructing the Baltic Pipe connecting the Polish gas market with the Danish and Norwegian Continental Shelf, Poland decided to build another gas pipeline to import from the Russian Federation – the Yamal Pipeline. Projects such as the Nabucco Pipeline or Adria LNG continue to experience significant problems in moving forward from the planning to the construction stage. Concurrently, Gazprom's flagship infrastructure project – the Nord Stream, is ready for completion in the autumn of this year.

These facts have revealed some systemic problems on the part of the former COMECON states to create their own independent energy policy in the gas sector. When completed, the Nord Stream will enable Gazprom to transmit natural gas to Germany and the United Kingdom bypassing transit countries such as Poland or Slovakia. The Nord Stream and other new Russian supply based projects (such as the OPAL and GAZZELLE pipelines or the planned South Stream export pipeline and Gazprom's shares in Baumgarten gas hub with its underground storage in German and Austria) follow a similar line to that of the Iron Curtain border.

In the case of the failure of Nabucco or Adria LNG the former COMECON states would have natural gas coming from the Russian Federation from both the eastern and western directions. Attempts by the EU to create a common liberalised gas market could end in Gazprom dominance over the Central European countries.

Only the implementation of the Third Energy Package together with the construction of the Polish LNG terminal and the connection of the Adria LNG by a North-South gas corridor¹⁸ could create a gas price benchmark, as well as direct access to gas producers other than Gazprom, and thus minimise the influence of Gazprom in Eastern Europe.

FSU countries

There is also a third group of countries referred to in Gazprom literature as formerly part of the Soviet Union (FSU) – Lithuania, Latvia, Estonia, Belarus, Moldova and the Ukraine. These states are fully dependent on Russian gas supplies with Russian natural gas export covering 100% of FSU importation needs.

Gazprom is using its monopoly position to acquire transport and distribution assets in exchange for debts. Until Putin's era, these countries paid much less for Russian natural gas than other Gazprom clients in Europe. The prices were similar to those in the Russian Federation partly because of the historical factors referred to above. After the collapse of the Soviet Union, the slow process of gas price increases began in FSU countries. These hikes have accelerated since 2003 with the new Russian Federation Energy Strategy. Gazprom announced price negotiations unilaterally to Moldova, the Ukraine and Lithuania which simply meant a sudden price increase for FSU economies. This process was very often connected with political pressure from the Russian Federation to the governments and parliaments of these young democracies.

Gas price issues in the Ukraine appeared at the same time as the public debate on the expiring agreement allowing the Russian Federation to keep its Black Sea Fleet in the Crimea in 2006, or the intensification of

¹⁸ The idea to connect the Polish LNG terminal in Swinoujscie with the Croatian LNG terminal via the Czech Republic and Slovakia, Austria and Hungary



Ukrainian efforts to gain a NATO Membership Action Plan in the first half of 2008. An increase in gas price (more than fourfold) was also announced by Gazprom in 2005 which was connected with the Presidential election in this country¹⁹.

Belarus lost control of its national gas transmission company Bieltransgas, in order to avoid a sudden gas price increase. Moldova experienced the same problems with their national leader Moldovagaz. Now Gazprom controls about 50% of its shares.

The Russian Federation has used this "economic" argument very often in bilateral relations with FSU and some Central European states. It is frequently successful because of the great economic dependence of FSU states on the markets of the Russian Federation and on the energy supplies coming from companies such as Gazprom.

Since 2003 there have been some serious natural gas supply disruptions (2004 Belarus, 2006 and 2009 Ukraine) and what was even more shocking for the EU, also disturbances in oil supplies (2007). Since cutting off supplies of natural gas and oil to Belarus or the Ukraine also affects supplies to the EU 15 countries, the Russian Federation is very much on the offensive in its diplomacy and lobbying in Brussels to keep its image as a reliable supplier. Gazprom attempts to make transit countries such as the Ukraine or Belarus appear unreliable and uses black PR to achieve this.

Another element of Russian Federation strategy is to bypass the FSU transit countries by building a large capacity pipeline system that will allow for the fulfilment of their supply obligations to the EU 15 countries without using the traditional export routes such as the Druzba Pipeline system. The Nord Stream, OPAL and South Stream gas pipelines fit the strategy of bypassing the Ukraine, Belarus and also Poland, the Czech Republic and Slovakia perfectly. This provides Gazprom with a better chance of keeping such countries under its domination. It is in the interest of Gazprom to maintain the long term contracts with the FSU and former COMECON states and keep them without alternative supply infrastructure.

2.4.2. The Oil sector

For the Russian Federation, the preceding decade was a period of redefining the strategic objectives of the Russian state in the oil sector. One direct consequence of the adoption of the *Energy Strategy of Russia for the period up to 2020* is the regaining of control by the Kremlin over the national oil assets. The majority of these had been privatised in the 1990's. Another objective is the expansion of Russian oil companies in the EU, supported by the Kremlin. But the most important objective of the new policy is to ensure the greatest possible control over the transport of crude oil from the Russian Federation and the Caspian region into the European market and worldwide.

Changes in the policy of the Russian Federation for the crude oil and natural gas sectors began with the election of Vladimir Putin as President of Russian Federation. Initially, the changes were not significant and not particularly evident. However, with the consolidation of the authority of the new President, soaring prices of oil and natural gas on the international markets, stabilisation of Russian public finances and the increasing demand for energy resources in the world, the changing course of the Kremlin began to be increasingly visible. The turning point for many analysts and observers was the Yukos case, the arrest of the owners and the company's bankruptcy. The year 2003 seems to be a turning point in the policy of the Russian Federation. An *Energy Strategy for Russia for the period up to 2020* was adopted, the Yukos case

¹⁹ See *Gazprom expansion in EU*, 2009, Centre for Eastern Studies in Warsaw



began, and for the last time a Western company was allowed to purchase a significant stake in a Russian oil company (50% stake in the TNK BP).

In December 2010, custodial sentences were handed out in the subsequent trial against Mikhail Khodorkovsky – the former head and major shareholder of the Yukos oil concern – and his business partner Platon Lebedev. The court’s decision, and the sharp rhetoric of the Russian leaders that accompanied the legal proceedings, confirmed the durable division of the Russian oil sector, after which Rosneft reached a dominant position that can also be observed in its international activities. Many of the most valuable Yukos assets went to this state-owned company, which took over the ‘crown’ from Yukos as Russia's largest oil firm.

Rosneft

The destruction of Yukos and the laying down of the foundations of the present architecture of the oil sector began in 2003. In October 2003, Khodorkovsky was arrested during Yukos negotiations with ChevronTexaco and ExxonMobil on a possible merger. The prosecution froze the majority of the Yukos assets, which were later sold at the price below their real value to companies appointed by the Kremlin. Most of the assets were taken over by Rosneft – a state owned company – to which president Putin showed favour in creating a parallel instrument to Gazprom²⁰.

The significant increase in market power and strategic position of Rosneft stemming from the destruction of Yukos led to a withdrawal by the Kremlin from its prior idea to merge Rosneft and Gazprom into one oil-gas giant. Nevertheless, the process of withdrawal from the consolidation of oil and gas assets in state hands encountered some turbulence.

The failure of the idea of consolidation was caused by the strong resistance of “Silovics” which controlled Rosneft²¹. Since 2004, a series of government auctions were organised to sell Yukos assets with the majority of bids won by Rosneft. Rosneft's daily production started to go up after it took over Yukos' main production unit, Yuganskneftegaz in 2004²².

In May 2007, Rosneft placed a winning \$6.8 billion bid at an auction for the Siberian assets of Yukos, including Tomskneft and the East Siberian Oil and Gas Company (VSNK)²³. In June 2007, Rosneft paid \$731 million for Yukos’ transportation assets²⁴.

All of these acquisitions allowed Rosneft to overtake the privately-owned Lukoil in terms of oil production capacity and to become Russia's largest oil company; and the company started to expand abroad.

Lukoil

The destruction of Yukos by the Russian state left Lukoil as Russia’s largest oil company not owned by the Kremlin, though of necessity loyal to the state and often in its graces. After the takeover of the richest oil

²⁰ Russia: Mixing Oil and Politics, STRATFOR, March 27, 2007

²¹ Russia: A Merger Fails, A Power Struggle Is Revealed, STRATFOR, May 20, 2005

²² Acquisition of Yuganskneftegaz made Rosneft the second largest oil and gas producer in the Russian Federation in 2005

²³ Russia's Rosneft Claims Market Leadership, Eurasia Daily Monitor , May 22, 2008

²⁴ Rosneft Gets More of Yukos, Oil & Gas Eurasia, June 2007



fields by Rosneft – previously owned by Yukos – Lukoil remains the number 2 company in the Russian oil market.

In recent years, the company was seemingly more active in foreign markets than Rosneft. Lukoil has broken into Western Europe's oil refining and retail market by taking over a 45% stake in Total Raffinaderij Nederland (TRN).

Several years ago, Lukoil embarked on a strategy to acquire stakes in refineries and retail marketing networks in the EU. The company had already acquired refineries in Bulgaria and Romania prior to the entry of these countries to the European Union. In the last few years, the Russian company targeted refineries in the Netherlands (Europoort Rotterdam), United Kingdom (Coryton), Germany (Wilhelmshaven), Lithuania (Mazeikiai), the Czech Republic (Ceska Rafinerska group), and Spain (Repsol), all unsuccessfully. The assets were simply too expensive to acquire during the oil-price boom of recent years.

In 2008, Lukoil bought a 49% stake – with an option for later expansion – in the Italian ERG group's ISAB refinery in Sicily (with its declared total processing capacity of 16 million tons per year). With this move, Lukoil broke into refining and marketing in the southern area of the EU for the first time.

Diversification

Diversification of export routes (in order to increase the security of supply and reduce transit risks) is an important component of the new Russian energy strategy. Several huge projects can be referenced: the Baltic Pipeline System (BPS-2), Burgas–Alexandroupolis, and Samsun–Ceyhan for oil transportation. Currently, Russia has a range of items in these pipeline projects: BPS-2 is under construction, while two competing projects to bypass the Bosphorus – Burgas–Alexandroupolis and Samsun–Ceyhan – are still in the phase of preliminary negotiations.

As a result of the construction of alternative routes for oil transport, the Russian Federation and the oil companies operating in its territory may restrict the export of crude oil and petroleum products by transit countries. The existence of diversified oil export routes for the Russian Federation decrease the risk of a conflict with the oil recipient countries in Western Europe in the event of supply disruption via transit countries.

2.4.3. Acquisitions

Gas sector

Russia boosts its energy shield strength by aggressive buying of European energy infrastructure. Since Putin was elected in 2000, Russia stepped up the pace of its asset acquisition²⁵. In the gas sector, Gazprom – Russia's largest foreign investor – has in recent years aggressively pursued ownership of key energy assets in EU states. Gazprom has shares in over 90 European companies from 20 countries – in the areas of natural gas distribution, transport and marketing²⁶. At the same time, in half of these, its share comprises or

²⁵ Russian energy companies generally take a first step by buying a blocking minority in a local company – 25% plus one share.

²⁶ <http://www.gazprom.com/subsidiaries/>



surpasses 50%²⁷. The Russian company guaranteed itself access to end consumers when prolonging long-term contracts with given EU countries such as Italy or France. Gazprom engages with the European market directly through the purchase of stakes in entities responsible for the distribution of energy sources to end consumers (such as the Baltic States) via daughter companies (such as ZMB in Germany, GMT Italia), joint ventures (Wingas in Germany, GWH in Austria), and sometimes via companies with few (such as Czech Vemex) or even no ownership ties (such as the Hungarian Emfesz).

Furthermore, at the end of January 2009, Gazprom created a joint enterprise with the Austrian OMV company for updating the system of gas storage facilities and the distribution network in Baumgarten, which are geared toward the storage and distribution of gas from the Nabucco pipeline.

The Russian monopolist is present on the British and Dutch North Sea Shelf, where its subsidiary Gazprom Germania has stakes in four minor exploration areas. With the help of Germany's Ruhrgas Gazprom exercises control over the gas facilities in the three Baltic States, where they also have monopoly control over the domestic gas markets²⁸. Gazprom is a co-owner or operator in all pipelines in Baltic States and most of pipelines in Finland (via 25% of shareholding in Sagum Oy). Moreover, Gazprom supplies 100% of the gas consumed in this region. The company holds shares in the Yamal pipeline in Poland (48.64% via EuRoPol Gaz), stakes in some pipelines in Germany (10.52% in the network in Eastern Germany owned by VNG and 50% in the Wingas gas network with construction of the new transit pipeline OPAL). In addition, Gazprom owns a 50% stake in the Austrian gas hub in Baumgarten. Gazprom owns stakes in several European gas storages, via its stakes in German companies such as Wingas and VNG, and Latvian Latvijas Gaze, and it also leases some parts of the volume in the EU countries, including Great Britain.

Gazprom is also engaged in the sale of natural gas to end consumers in an indirect way, through companies linked with Gazprom in a more or less formal manner. Examples of such companies include: Vemex (Czech Republic), Emfesz (Hungary), Conef (Romania), and Dujotekana (Lithuania). These companies are beneficiaries of the liberalisation of the EU gas market, and enter into contracts with end consumers. Increase in their activity is visible in recent years, although their development is limited by competition from European companies, by domestic legislative provisions member states, and by European regulations.

Gazprom has a relatively small presence in other sectors other than the gas sector of the EU economy. The company engages with the electricity, chemical and fuel sectors. In 2009, despite the economic crisis, activity on the part of the Gazprom daughter company Gazpromneft was observed in the European fuel sector (investments in Serbia and Italy). Gazprom also has ambitious but as-yet-imprecise plans to invest in the European electricity sector, declaring its engagement in the planned power stations in Germany and Latvia. Some information was released concerning a possible stake on the part of Gazprom in the construction of a gas-fired power plant in Poland. Gazprom is already directly involved in Lithuania, where it owns a combined power and heat plant in Kaunas.

²⁷ For example Gas Und Warenhandelgesellschaft, Overgas In. AO, Fragaz, WIEH GmbH&Co KG, Prometheus GAS S.A., Promgas SpA, Blue Stream Pipeline Company B.V., Gas Project Development Center Asia AG (Zug), WIEE, Nord Stream AG, see C. Boyden Gray, "Europe Should Tackle Gazprom Monopoly," *European Affairs*, X, Nos. 1-2, Winter/Spring 2009

²⁸ Lietuvos dujos in Lithuania, Latvijas gaze in Latvia, Eesti Gas in Estonia



Germany remains the most important European market for Gazprom, irrespective of the unsuccessful attempts to start close cooperation with RWE and the sale by E.ON Ruhrgas of its entire package of Gazprom shares (3.5%)²⁹.

Along with the completion of subsequent stages of the Nord Stream construction process, Gazprom is increasing its ownership of German gas companies. One of the major investments in recent years was the acquisition of shares in VNG (Verbundnetz Gas), the biggest gas supplier in Eastern Germany. In 2010, Gazprom took over 5.26% of VNG shares from Gas de France (GdF)³⁰. This allows the Company to influence VNG's activity jointly with their business partner Wintershall by holding a so-called minority defensive stake (26.31% of shares). Such shares will facilitate the use of VNG gas infrastructure, sales of natural gas coming from the Nord Stream in Germany and in Central European countries, including Poland.

The acquisition of shares in the submarine pipeline Interconnector connecting Great Britain with Benelux States constitutes another important investment in the context of the Nord Stream Project.

Centrica case-study

At the turn of the century, it was clear that within the next few years the United Kingdom would become a net importer of natural gas. Companies supported by the British government initiated efforts to obtain additional natural gas supplies. One of the major projects was to build the Langeled gas pipeline from the Norwegian Troll gas field, which had a successful start in 2006. However, the Langeled pipeline could not adequately fill the supply gap in the long term by itself. The United Kingdom built the LNG import terminals and also prepared to obtain natural gas from the Continent.

Gazprom's strategists have been aware of the energy situation in the United Kingdom, as well as of the higher gas prices that would appear on the UK market due to a decrease of indigenous gas production. In 2006, Gazprom explored the possibility of a takeover of the largest gas operator in the UK market, Centrica. The acquisition of Centrica by Gazprom would complete the whole chain of logistics transporting natural gas from the Nord Stream pipeline via the transit pipeline NEL in Germany and the Netherlands (together with the construction of underground gas storage facilities supporting deliveries) to the BBL interconnector between the Netherlands and the United Kingdom. As an owner of Centrica, Gazprom would enter the UK gas market easily to sell natural gas from the Nord Stream.

Since 2003, British law allows the government to interfere with plans for foreign acquisitions only in the case of a threat to national security. Such a claim could not be made in the case of an acquisition of an energy company. Observing the attempts by Gazprom to take over Centrica, the British government considered the introduction of changes in the law which would prevent the acquisition of this important gas market player.

In mid-February 2006, the authorities in the United Kingdom announced officially that any attempt to seize Centrica by Gazprom would be very carefully examined. After these statements, Gazprom and the authorities of Russian Federation threatened to redirect their gas exports from EU to the Far East and demanded that the UK government should abandon its economy protectionism. In mid-April 2006, the Prime Minister Tony Blair assured that his government would not prevent any takeover of Centrica.

²⁹ E.ON disposed of Gazprom's shares, CES, the 15th December 2010.

³⁰ In exchange for shares in VNG GdF obtained 9% of shares in Nord Stream (at the cost of E.On's and Wintershall's shares).



Ultimately, despite its plans Gazprom was not able to take over Centrica – which reflects the effectiveness of the of the UK's unofficial diplomacy activities, which prevented the acquisition of a British company.

After the failed attempt to take over Centrica, Gazprom invested in the United Kingdom through its subsidiaries, or business partners (including WINGAS or E.On). Through its participation in construction projects for natural gas underground storage, Gazprom will gain a better trading position as a supplier of natural gas in the British Isles once the Nord Stream and NEL pipelines commence operations.

Oil sector

In the oil sector, the main objective of Russian companies is to gain access to the refining industry and to the end consumers of oil products (mainly petrol stations). Refineries may be considered as deficit and highly de-capitalised elements of the Russian oil sector; this activity increases the length of the value chain and provide greater immunity against any possible crisis in the oil and oil products markets.

The attempted takeover of the Hungarian MOL (2009) was part of Russia's policy to obtain and expand control of the oil and gas pipelines and processing plants in the EU territory by state-controlled Russian companies. In the oil business, MOL owns the most efficient refineries in Central Europe, with a combined capacity of more than 15 million tons annually, including one in Slovakia with a major role in that country's economy. MOL could have served as an instrument by which Russian companies would enter the Central European and Balkan markets. The plan failed thanks to vigorous and effective defensive activities at the level of the MOL management.

In December 2008, Gazpromneft acquired 51% of shares in Serbia NIS for 400 mln euros, in the context of a wider agreement between Serbia and the Russian Federation, which in fact handed over the oil sector in this Balkan State to the Russian company.

Power generation

Apart from gas and oil, Russia attempts to expand its activities into the domain of the electricity sector in the countries of the former Soviet Union. Lithuania may constitute the first target for the Russians. This country is a net importer of electricity due to the closure of an old nuclear power plant in Ignalina. The construction of a new facility – that was supposed to be financed by the three Baltic States and Poland – is in doubt.

Meanwhile, the Russian Federation has started the construction of a new nuclear power plant in Kaliningrad with a generation capacity that exceeds the present and future demand of this exclave. In order for this investment to succeed, two thirds of its future production must be sold abroad, hence pressure on Poland to build an energy bridge with the Kaliningrad Oblast and lobbying against the construction of a power plant in Lithuania.

One of the most important points of the new Russian energy agenda is a significant increase in the number of nuclear reactors (from 31 to 59) and a shift to electricity as a major Russian Federation export product.

Russia should control at least 25% of the global market of construction of nuclear power plants and affiliated services, Prime Minister Vladimir Putin declared in Spring 2010. At present Russia controls



approximately 20% of the global market³¹. The nuclear sector is of strategic significance for the Russian authorities. Rosatom receives both financial and political support³².

Rosatom is interested in the participation of the expansion of a Czech nuclear power plant in Temelin. In November 2010, the Russian Federation made an agreement with Bulgaria on the construction of a nuclear power plant in Belene, on the river Danube. The first reactor is due to start operation in 2016, the second a year later.

³¹ Reuters, 18th March 2010

³² In mid 2009 Rosatom received more than 1.6 bln USD.



3. CHANGES IN THE MARKET AND THE IMPLICATIONS FOR THE GAZPROM INVESTMENT STRATEGY

The Russian federal budget is heavily dependent on revenues from the oil and gas sector. Both, the condition of the budget and of the Russian economy heavily depend on the level of world oil prices.

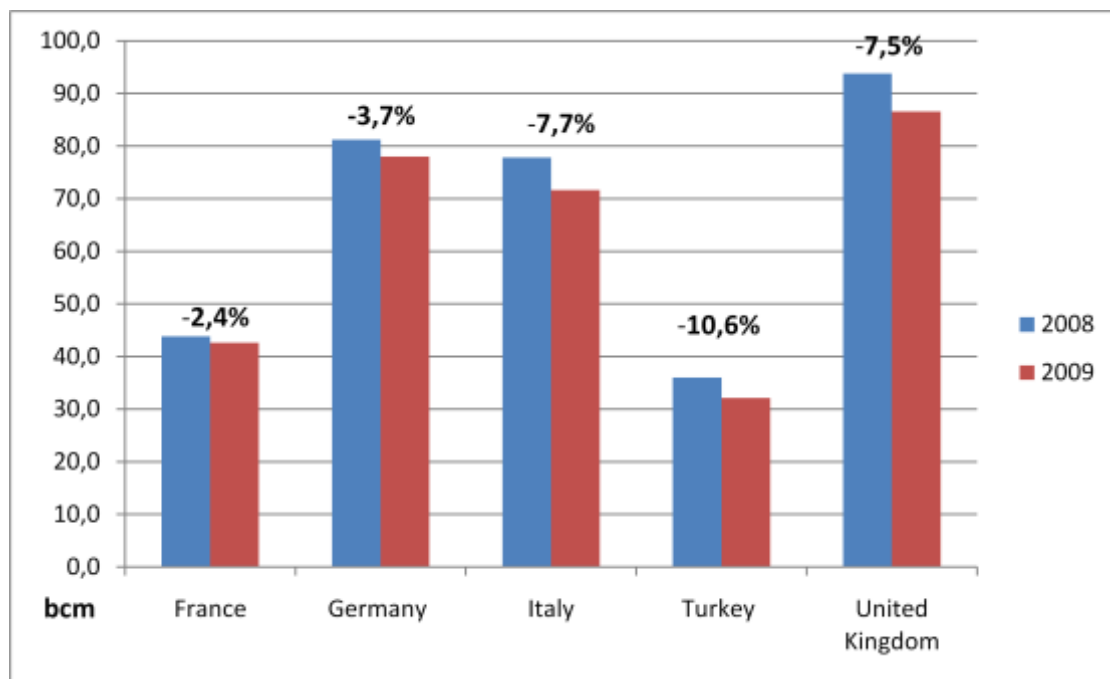
In 2006, revenues from oil and gas exports corresponded to 50% of the budget revenues. In 2007, the dependence of the budget of the Russian Federation on the revenues from oil and gas taxes was over 60%³³.

Gazprom

There are three main factors weakening Gazprom's influence in Europe, which appeared simultaneously with the global financial crisis in 2009. At that time, world gas consumption fell 2.1% year to year. The most promising gas markets for Gazprom in Europe declined even more (see chart below).

The unconventional natural gas in the United States caused quite a revolution on the world gas market. In 2000, the share of shale gas in US domestic gas production was 1%. Currently, its share has risen to 20% and may achieve 50% by 2035³⁴. A collapse of LNG imports to the US has started in parallel with the shale gas revolution.

Chart: Decline of natural gas consumption in chosen economies in 2009.



Source: BP Energy Statistical Review 2010

³³ See <http://www.globalsecurity.org/military/world/russia/energy.htm>

³⁴ Fueling North America's Energy Future, IHS Cambridge Energy Research Associates, 2010



A world gas surplus resulting from the increased liquefaction capacity in the Middle East (Qatar) and unconventional gas revolution in the United States (accompanied by the decrease of LNG demand in the US) caused a dramatic fall in the prices of free spot natural gas in the Atlantic basin. In the Summer of 2008, the National Balancing Point (United Kingdom) and Henry Hub (US) spot gas prices were above 13 USD/MMBtu (~480 USD/1000cm) and fell below 4 USD/MMBtu (~150 USD/1000cm) in September 2009³⁵.

With access to regas terminals, energy companies from France, Germany, Italy or Turkey requested renegotiations on price formulas and ToP obligations in their long term contracts with Gazprom. Between February and April 2010 the following parties *inter alia* renegotiated their contractual conditions with Gazprom: ENI (Italy), E.ON-Ruhrgas (Germany), E.On Foldgas Trade (Hungary), EconGas (Austria), and Gasum (Finland)³⁶. Gazprom was not sympathetic to the pleas of its contracting parties in each case and the first lawsuit against the prices demanded by the Russian monopolist came in autumn 2010³⁷.

For Gazprom expansion plans, more dangerous still is the risk of decoupling the gas price from the oil price. Since 2008, big natural gas buyers in Europe have preferred to use low-priced spot purchase, while maintaining the price formula (oil indexation) *status quo* was in the interest of Gazprom. E.On., GdF and ENI managed to incorporate a gas-to-gas component into their price formulae with Gazprom. If the world gas surplus continues and the process of delinking gas from oil price remains, Gazprom will face big problems with the sales of gas to Europe under the terms of the existing contracts.

The effects of the financial crisis that started in 2008, as well as the changes in the global gas market which followed, referred to above, were felt by Gazprom severely³⁸. At the end of 2007, Gazprom with its market capitalisation of 332 bln USD was third in the world ranking of energy companies (PFC Energy 50). The crisis pushed Gazprom down to 11th place in 2008 (83 bln USD) and 10th place in 2009 (144.2 bln USD). Since the end of 2009 however, an increase in the Gazprom market value can be observed; in PFC ranking for 2010 Gazprom advanced to the 6th place with its market capitalisation of 149.4 bln USD.

In 2009, Gazprom noted a decline in practically all indicators. With a smaller demand for gas resulting from the crisis and the rapid growth of supplies of cheap LNG on the spot market, Russian gas – supplied by pipelines as part of long-term contracts – lost its price competitiveness. Gazprom's income from gas exports to Europe (36.8 bln USD in 2009) fell against the previous year by around 5 bln USD³⁹. Due to the rigid export policy, the price of Russian gas was the highest in Europe in the first half of 2009 and during the whole year it was a dozen or so times higher than in the exchange market. This resulted in a decrease of exports (nearly 12% in comparison to 2008) and in a decrease in EU market share (approximately 1%)⁴⁰.

³⁵ Source: from chart *Gas Matters April 2010, Gas Strategies*. See also *Natural Gas Market Review, 2009, IEA, p.22*

³⁶ Vedomosti, 10th March 2010 r

³⁷ On 2 November head of Italian gas company Edison, Umberto Quadrino, informed that his company filed a lawsuit in the Stockholm Court of Arbitration against Promgas, belonging to Gazprom and Italian ENI, in favour of a decrease in the price of Russian gas in the long term contract. (Russian Federation: Edison vs. Gazprom case in Stockholm arbitration, CES, 17th November 2010.)

³⁸ The capitalisation of the company according to Bloomberg decreased 2.5 times from 2008 to 2009. In autumn 2010 Gazprom's assets were evaluated to be worth USD 144.87 bln (the 32nd place on the list of the world's biggest companies as regards capitalisation).

³⁹ *Crisis blows the Gazprom's strategy* CES, the 7th July 2010

⁴⁰ Gazprom makes trade in gas with Europe more flexible, CES, 3rd March 2010.



The decrease in income and the large debt on the part of the company (above 60 bln USD in 2009) led to a reduction of the planned investment budget by 30%, mainly by postponing production projects (Yamal and Stockman fields). The expenditure on strategic pipeline projects (including the Nord Stream and South Stream) in the 2009 budget and the planned 2010 budget remained as scheduled since the crisis was regarded as temporary. Based on overly optimistic predictions of an increase in exports in 2010 and an increase in gas prices by 2012, the company management declared their intention to counteract any attempts to change contractual conditions in the future and did not withdraw from the plan of taking over 10-20% of the American gas market as well as 1/3 of the EU market.

The situation on the market in 2010 forced Gazprom to verify its plans. In 2010, Russia's natural gas sector had increased domestic production and exports, apparently recovering from the recent economic downturn. The achievement of financial results at a pre-crisis level was associated more with the increasing demand on the domestic market. The production figures for Gazprom fell short of earlier positive forecasts. The plan was to produce 519-525 bcm of gas in 2010, but the company only managed to reach an output of 508.5 bcm last year⁴¹. This decrease indicated Gazprom's weakening position in Europe.

In September last year, Gazprom modified its budget for 2010. Despite some pessimistic predictions concerning the company's income (expected 4% decrease in relation to prior forecasts) the monopolist increased the investment programme by 13 % (above 3bln USD). The new gas pipelines remained a priority⁴².

Gazprom continues to favour huge, capital-intensive and export-oriented projects such as the Nord Stream and South Stream. Paradoxically, these projects also serve to increase costs and make Russian gas exports less competitive. Gazprom aims to launch the first stage of the Nord Stream subsea gas pipeline in September 2011. The first stage would have a capacity of 27.5 bcm annually, with eventual capacity of 55 bcm per year. The first stage of the 1224 km Nord Stream subsea gas pipeline is currently (January 2011) estimated to be 75% completed. The second stage is expected to be completed next year, doubling the annual production capacity⁴³.

On 24th April 2010, Russia and Austria signed an intergovernmental agreement in Vienna on the accession of Austria to the gas pipeline South Stream project. The same day, Gazprom and OMV signed an agreement on the establishment of a SPV company (50:50) responsible for design, construction and exploitation of the Austrian part of the pipeline⁴⁴. Agreement with Austria was the last in a series of agreements concluded by Russia with transit countries.

Bilateral Russian deals with Italy, Austria, Hungary, Bulgaria, Italy, Greece and Slovakia may have undermined fatally European plans to bring non-Russian controlled oil and gas to European markets.

On the 24th November 2010 Gazprom's Board of Directors approved an investment plan for 2011. The Investment budget will reach 27.2 bln USD, 10% less than in 2010. The approved plan indicates that in 2011 pipeline projects on Russian territory (including the Grazoviec-Wyborg pipeline, constituting a land based section of the Nord Stream) are a priority for the company. The budget for projects with long investment

⁴¹ Interfax, 3rd January 2011 r

⁴² Despite the crisis Gazprom will increase its investment by USD 3 bln, CES, 15th September 2010.

⁴³ Gazprom holds 51 percent in Nord Stream AG, Wintershall 15.5 and E.ON Ruhrgas 15.5 percent each, Gasunie and GDF Suez 9 percent each.

⁴⁴ Russian Federation: Termination of introductory phase in South Stream project, CES, 28th April 2010 r



periods such as the Stockman project on Barents Sea Shelf was cut by the greatest degree (44%)⁴⁵. The lack of financial resources necessary for many investments is maximally associated with the disadvantageous conditions of gas exports to Europe.

Modification of contractual conditions, and an actual decrease in prices led to significant changes in the Gazprom strategy. This demonstrates the company's partial and selective adaptation to increasing pressure on price competition. Gazprom strives to maintain its market share, ensure clearance of Russian gas and to enhance its price competitiveness. In exchange for improved supply conditions, Gazprom endeavours to achieve a commitment from its European contracting parties to use the Nord Stream and South Stream pipelines more frequently in the longer term as well as to foster cooperation in the energy sector. Nevertheless, it is predicted that the current trends on the gas markets will last for the next few years at least, and the on-going surveys of possible shale gas in Europe constitute important risks for the company in the longer term⁴⁶.

⁴⁵ Gazprom's investment plan for 2010, CES, 1st December 2010

⁴⁶ World Energy Outlook published by the International Energy Agency (IEA), natural gas consumption is expected to fall by 5% by 2015 and 17% by 2030 compared to a business-as-usual scenario if environmental policies such as energy efficiency and the expansion of renewable energy are put into place. Similarly, a report by Cambridge Energy Research Associates (CERA) states that the European Union is able to cut back its consumption by 125 bcm per annum – similar to consumption levels in the early 1990s by 2030 using existing technologies to increase energy efficiency.



4. EU ENERGY POLICY AND ITS IMPACT ON THE MAIN ACTIVITIES OF THE RUSSIAN FEDERATION

The biggest threats to the plans of the Russian Federation in Europe – but also the biggest opportunities – could come from the political decisions of the EU on energy issues. There are *inter alia* three main areas of great importance for Gazprom's strategy in Europe. Two of these are associated with political decisions which might lead to a rapid increase in the demand for natural gas in the EU economies. These are: ideas on carbon reduction and support for the use of renewables in power generation, particularly wind power.

The last of these refers to legislation concerning the competence of energy companies in the operation of gas infrastructure. This is associated mainly with the Third Internal Energy Market Package, which is in the process of implementation in EU member states.

It is in the interest of Gazprom to create new demand for gas through the use of political instruments, mostly in the power generation sector in Europe. Similarly, Gazprom has an interest in gaining control over possibly the entire gas supply chain from the Russian Federation to Europe.

4.1. CARBON REDUCTION

The idea of carbon reduction in the European Union presented in the 20/20/20 targets⁴⁷ will have far-reaching consequences for all energy companies operating in the EU energy market, and also for the Gazprom energy strategy.

In order to better understand the opportunities for Gazprom that arise from the idea of carbon reduction in the EU, certain background information must first be established.

41% of the world's CO₂ emissions come from electricity and heat⁴⁸. This means that the electricity and heat sector would need to change its fuel in the power generation process in order to comply with the new EU CO₂ emission standards. Basically, this means that countries in which lignite and coal are the primary energy source will have to undertake strategic economic decisions to switch from coal/lignite to other energy sources or technologies for the production of electricity.

When examining the possibilities of the maximum decrease in carbon use at the minimum cost, the one with the greatest potential is that of nuclear power (not taking into account the forestation and deforestation policy)⁴⁹. However, construction of nuclear power facilities is capital intensive and a long process. Construction of combined cycle gas turbine (CCGT) facilities is the cheapest and fastest way to fill the gap in electricity production after withdrawal from coal-based technologies. Moreover, natural gas based power plants (CCGT for example) can operate during daily peak demand when large quantities of

⁴⁷ EU energy policy targets endorsed in March 2007 by the European Council which are: reducing greenhouse gas emissions by at least 20%, improving energy efficiency by 20%, raising the share of renewable energy to 20%, all targets to achieve by 2020

⁴⁸ *The carbon productivity challenge: Curbing climate change and sustaining economic growth*, McKinsey & Company, June 2008, p.14-15

⁴⁹ Id.



electrical power are needed for a few hours. Neither coal, nor nuclear power stations can match such a demand model (see section: *Renewables*).

With regard to the CO₂ emissions ratio in electricity production according to the type of primary fuel used (per kWh), one of the highest is for lignite (940 g CO₂/kWh)⁵⁰. Crude oil and natural gas have a ratio of 640 and 370 g respectively.

At the end of 2009, the installed coal capacity in the EU was 230 GW⁵¹. Assuming that only 30% of the coal power generation in the next 15 years will be replaced by gas power plants, the demand for natural gas in the EU will increase by around 75 bcm.

This is why countries which produce natural gas – and companies such as Gazprom – are among the greatest supporters of the idea of carbon reduction⁵².

Table : Power production in GWh generated from coal, wind and natural gas in selected European economies in 1997 and 2008

| Coal | | | |
|----------------|---------|---------|--------------------|
| | 1997 | 2008 | % of total in 2008 |
| Germany | 143 103 | 124 617 | 29.3% |
| United Kingdom | 119 717 | 125 316 | 33.2% |
| Poland | 79 777 | 83 914 | 90.2% |
| Spain | 57 307 | 48 714 | 15.4% |
| France | 20 618 | 24 447 | 4.3% |
| Italy | 20 384 | 43 073 | 14.4% |

| Wind | | | |
|----------------|-------|--------|--------------------|
| | 1997 | 2008 | % of total in 2008 |
| Germany | 3 034 | 40 574 | 9.5% |
| United Kingdom | 667 | 7 097 | 1.9% |
| Poland | 2 | 837 | 0.9% |
| Spain | 716 | 32 203 | 10.2% |
| France | 11 | 5 689 | 1.0% |
| Italy | 118 | 4 861 | 1.6% |

⁵⁰ Id. p. 37

⁵¹ Eurostat

⁵² See Gazprom's annual report 2009, p. 18-21.



| Natural gas | | | |
|----------------|---------|---------|--------------------|
| | 1997 | 2008 | % of total in 2008 |
| Germany | 50 176 | 75 921 | 17.9% |
| United Kingdom | 110 963 | 176 748 | 46.9% |
| Poland | 215 | 3 166 | 3.4% |
| Spain | 18 174 | 121 561 | 38.5% |
| France | 4 900 | 21 915 | 3.9% |
| Italy | 61 293 | 172 697 | 57.7% |

Source: Eurostat

In order to comply with the carbon reduction standards in a short period of time, European countries which burn coal for power generation will have to construct power generation facilities based on natural gas – and thus natural gas is the only fuel able to fill the gap in power production from coal in a relatively short time.

A decrease in the number of coal plants – due to the limitation on CO₂ emissions and the foreseeable costs of the purchase of CO₂ emission rights – will cause an increase in the number of low-carbon nuclear power plants providing the basal demand, and gas power plants covering the peak demand for electricity, and providing favourable pricing conditions for base needs as well.

States such as the United Kingdom, Germany and Poland – which utilise large amounts of coal as a base in the electricity production process – will face a big challenge in changing their national long-term energy policies. Each of these countries has a different economic situation.

The United Kingdom has become a net importer of natural gas, although a few years ago it was selling surplus gas to the Continent. To fill the supply gap caused by falling domestic production, the UK decided to build LNG import terminals with a huge send out capacity. The UK, in a similar way to Germany, is not dependent on one particular supplier. Germany is the main gas consumer in the European Union and has well-diversified gas supplies⁵³. Poland on the other hand receives its natural gas supplies solely from the Russian Federation.

Not all regional gas markets in Europe are liquid enough for power companies to make *final investment decisions* to build natural gas-fired power plants based on the spot market price for natural gas and short-term gas purchase contracts. Many new infrastructure energy investments are developing an in *project finance* formula and need to have long-term supply contracts in order to commence construction, and to minimise the risk of supply shortage or increases in energy source prices. Financial institutions and banks require such arrangements to ensure a relative certainty of collecting all interest payments related to the new project.

Such political and financial circumstances lead to the risk of greater dependence on imported energy supplies for coal-based economies. This is even more dangerous for those economies which are deprived of diversified sources and routes of supply, and which purchase natural gas from a sole supplier (who then has the power to achieve not only economic but also political goals).

The switch from coal to natural gas for the generation of electric power will deepen dependence on gas suppliers. Any gas supply shortages will also affect the power generation sector.

⁵³ Germany takes natural gas from the Netherlands, Norway and Russia and has indigenous production as well as access to the Zeebrugge LNG terminal.



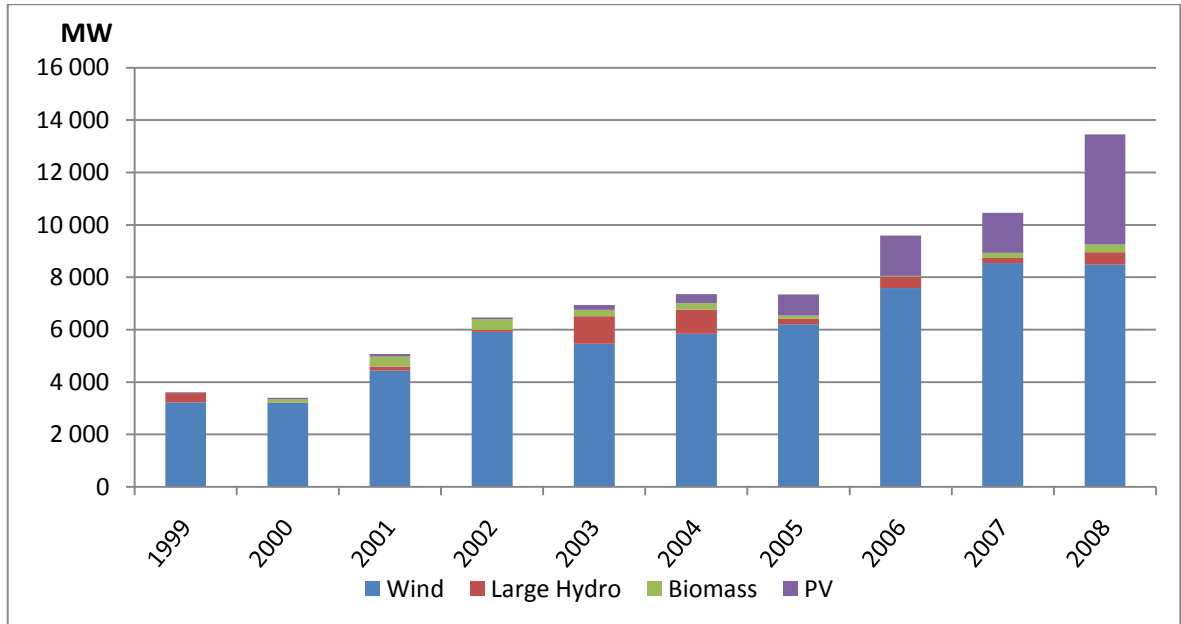
4.2. RENEWABLES

Additionally, the EU energy policy for the promotion of renewable energy sources is, in practice, beneficial to the Russian Federation. Another EU directive – defining the limitations and reductions in emissions of CO₂ – will promote the use of natural gas in power generation and for heating.

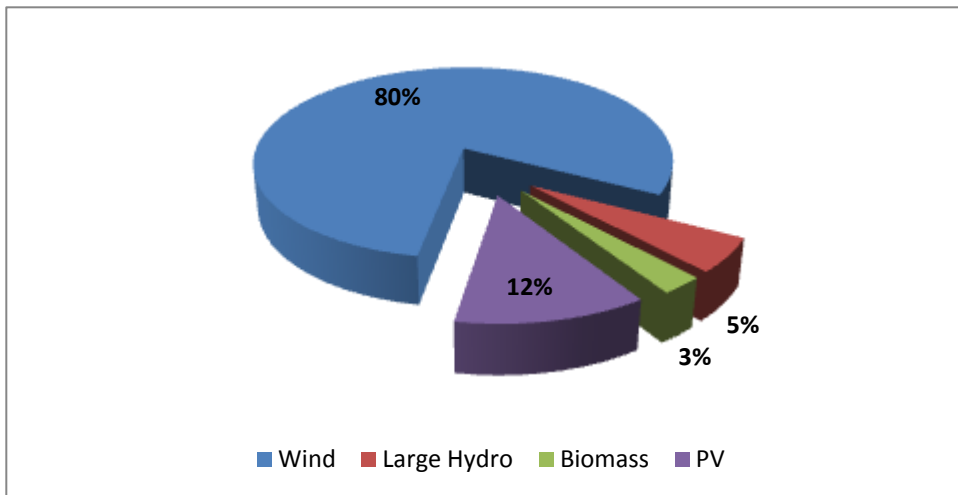
In order to comply with the standards arising from the 20/20/20 EU targets, the share of renewable energies in the overall EU energy mix will have to increase decisively. Meanwhile, a large increase in the use of renewable energy sources will be possible primarily through the use of wind power. Neither biomass or biogas, or hydroelectricity will be able to cover 20% of the EU's energy needs.



Charts: New annual power capacity in EU and % share of cumulative (1999-2008) new capacity of each renewable



Source: European Wind Energy Association, EPIA, Platts Powervision



Source: European Wind Energy Association, EPIA, Platts Powervision

The increasing use of wind power facilities will trigger the need to build more natural gas power stations, in order to provide a back-up power generation system, since wind power is a highly unreliable source of energy heavily dependent on the weather.

A good example of natural gas used as a back-up system (*combined cycle gas turbine*) comes from Spain, which has installed 17 GW of wind power and 22 GW of CCGT. On 27th August 2009 the electricity produced from wind satisfied only 1% of the daily energy demand, while on 8th November 2009 the share of

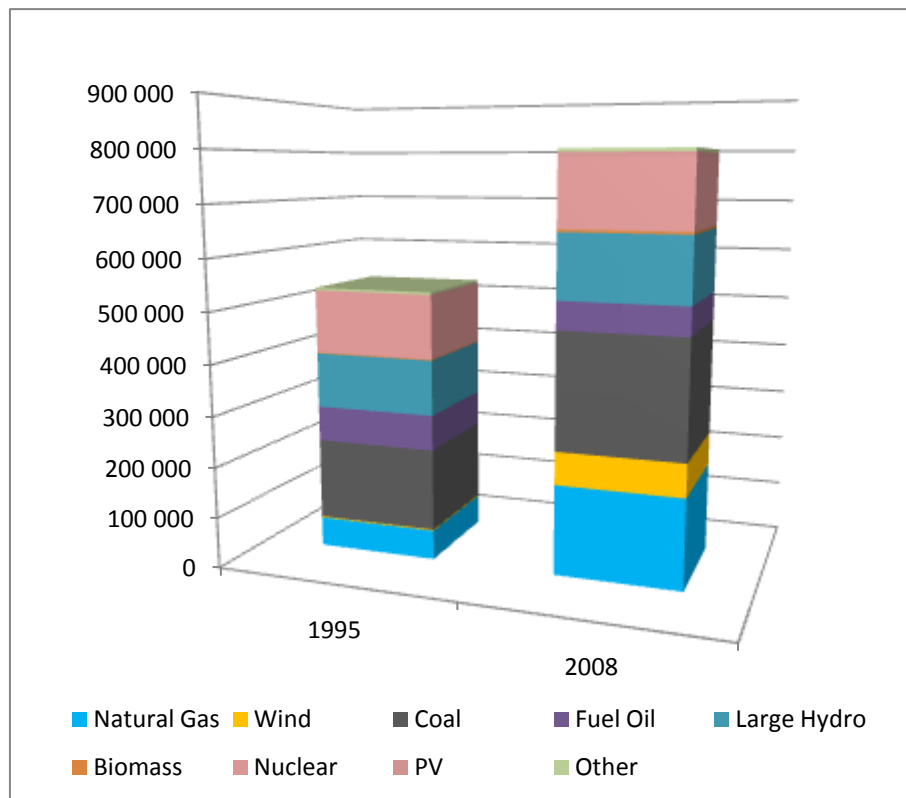


electricity produced from wind was 45%⁵⁴. Fluctuations in the output gap in both seasonal and daily demand are met by CCGTs in Spain.

In the years 1999-2008, nearly 59 GW of wind and over 101 GW of gas power were generated by plants in the EU.

In the years 1995-2008 approximately 268 GW of new capacity was constructed in the EU. The chart and table below show that coal, hydro and nuclear energy sources decreased in importance while those of wind and natural gas increased in importance during this period.

Chart: Total installed power capacity in the EU in 1995 and 2008



Source: Eurostat, European Wind Energy Association

⁵⁴ Source: Red Eléctrica de España, www.ree.es



Table: Total share of different energy sources in installed power capacity in the EU in 1995 and 2008

| | 1995 | 2008 |
|-------------|-------|-------|
| Natural gas | 11.0% | 22.2% |
| Wind | 0.5% | 8.1% |
| Coal | 30.2% | 28.6% |
| Fuel oil | 13.1% | 6.9% |
| Large hydro | 20.4% | 15.6% |
| Biomass | 0.4% | 0.6% |
| Nuclear | 23.5% | 16.1% |
| PV | 0.0% | 1.1% |
| Other | 0.9% | 0.8% |

Source: Eurostat, EWEA

4.3. THIRD INTERNAL ENERGY MARKET PACKAGE

The EU Third Internal Energy Market Package consists of five main documents: three regulations and two directives. The main document for the gas sector is Directive 2009/73/EC of the European Parliament and of the Council, dated 13 July 2009, concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC (Directive 2009/73/EC).

Directive 73 is of crucial importance for the Gazprom strategy in Europe. The legislators' intention was to break the monopoly practices of vertically-integrated companies that discriminate against competitors with regard to network access and investment. The European Council noted in its opinion in 2007 that the previous directive relating to the gas sector (2003/55/EC) was not adequate to eliminate such practices. Only the "effective separation of supply and production activities from network operations" could eliminate discriminating actions⁵⁵.

Gazprom is the owner of all the gas pipelines in the Russian Federation. Moreover, the Russian company has shares in the main pipelines transporting natural gas to Europe from the Russian Federation (Ukraine, Belarus, Slovakia, Poland, East Germany, and Interconnector). It also holds a majority in the Nord Stream and South Stream consortia, the new routes for the export of gas from Russia and the Caucasus to the EU.

What potential threats to Gazprom arise from Directive 2009/73/EC? There are two major threats.

Firstly, the Directive establishes a model of *ownership unbundling* as the main model for the functioning of natural gas operations in the EU. Ownership unbundling, "which implies the appointment of the network owner as the system operator and its independence from any supply and production interests, is clearly an

⁵⁵ See also Directive 2009/73/EC, point 7 and 8 of the preamble.



effective and stable way to solve the inherent conflict of interests and to ensure security of supply”⁵⁶. What is important is the fact that EU legislators see *the inherent conflict of interests* when companies act in a vertically integrated manner (c.f. Gazprom) and simultaneously own and operate the gas transport infrastructure in addition to producing and trading natural gas.

As follows from the ninth article (paragraph 1) the owner and operator of a gas transmission system should be the same company with full ownership, independent of any other involvement in the production or trade of natural gas. The Directive also contains a principle which states that “persons from third countries should therefore only be allowed to control a transmission system or a transmission system operator if they comply with the requirements of effective separation that apply inside the Community”⁵⁷. This principle is often referred to as the so-called Gazprom clause.

These two principles – ownership unbundling and the Gazprom clause – strike at the foundations of Gazprom's strategy in Europe, to acquire gas infrastructure (transmission pipelines) and make European countries more dependent on purchasing Russian natural gas.

The ownership unbundling principle was eventually weakened by adding paragraph 8 in Article 9 and Article 14 and Chapter IV to the text of directive. These regulations introduce two more models of system operation, independent system operator (ISO) and independent transmission operator (ITO). Both new models assume the ownership of a gas transmission system by vertically-integrated gas companies. This is the result of German and French lobbying during the drafting process of the Directive. Their leading companies E.On, RWE (Germany) and Gaz de France have had some trouble with the European Commission because of their discriminatory practices in granting access to their gas systems. What is more, they would have had to sell their gas grids according to the ownership unbundling principle as it was in its original form.

In the ISO model, the gas system operator must be designated through a proposal from the vertically-integrated company, the owner of the gas infrastructure. The ISO should be a different company from the owner of the transmission system and independent from it in terms of all of the independence criteria described in Article 9 of the Directive.

In the ITO model, the gas system operator is part of the vertically-integrated company which owns the infrastructure. The ITO should comply with all the criteria of independence set out in Chapter IV and Article 9 of the Directive.

In both models, the ISO and ITO are responsible for granting access to gas infrastructure of which they are operators, on a non-discriminatory base (third party access) and eventually for signing all access agreements. They are also responsible for the development of the gas grid and raising finance for it from the market.

However, what is important is that all the decision-making power (in terms of which model will be implemented within the territory of particular state) rests with each individual EU member state⁵⁸. This is crucial for the states in which Gazprom has its own gas infrastructure or has shares in companies owning gas system grids.

⁵⁶ Id. Point 8 of the preamble

⁵⁷ See point 22 of the preamble and article 11.

⁵⁸ See article 9 paragraph 8 and point 18 of the preamble.



The second threat to Gazprom's strategy in Europe is the system of certification for system operators and the rules regarding third countries in this matter⁵⁹. The Directive notes that in the case of a request for certification by a system operator from a third country company, the European Commission should be notified. However, each EU member state has the right to refuse such certification if it comes to the conclusion that such certification is contrary to the energy security interests of the given country – even if the operator or owner of the gas system from a third country fulfils the conditions of Article 9. This right remains in effect even if the EC has a different opinion in the given case⁶⁰.

Depending on how EU member states implement the Gas Directive in terms of the control and operation of gas pipelines, they have been given either a powerful instrument of defence against the expansion of companies such as Gazprom or, on the contrary, an instrument to strengthen the influence of vertically-integrated companies. The ownership unbundling model gives member states in which Gazprom has transmission assets the potential to revoke control over the transmission infrastructure from vertically integrated companies, which will improve market competition. This model gives member states a powerful instrument to impose competition in access to gas infrastructure. If the ITO model is adopted, the control over pipelines in which Gazprom is already a participant will be strengthened.

The example of Lithuania, which has initiated talks with Gazprom and E.On on the possibility of the repurchase of all shares in the transmission company in Lithuania (ownership unbundling model) and the strong negative response from Gazprom, shows how inconvenient an instrument ownership unbundling is for the implementation of Gazprom's strategy in Europe.

5. POSSIBLE SCENARIOS

An open liberalising EU gas market would provide an easy field for expansion, for vertically integrated companies that have access to their own gas deposits (such as Gazprom). The construction of interconnectors between EU gas systems (particularly in Central and Eastern Europe) may in some cases mean *de facto* pipelines with only one-way direction.

Such a scenario would also be beneficial for the Russian monopoly. If control is gained on one regional market which is well-connected with neighbouring member states, the company will have access to all the neighbouring markets.

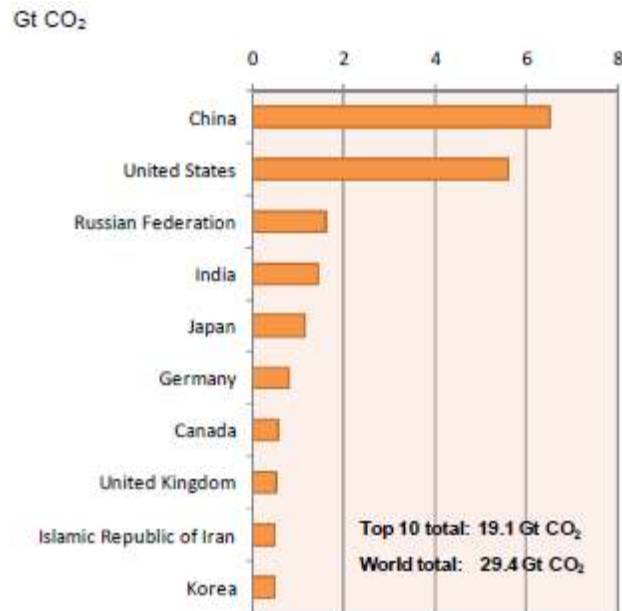
Developing electricity connections between the member states will increase energy security and will facilitate the development of the EU electricity market. However, if the EU is willing to develop connections with countries which are not members – such as the Russian Federation – this would also be conducive to the expansion of the entities holding power generation capacities in these countries. Since energy sectors of EU neighbour states are not subjected to EU pressure in terms of the environmental protection, they are often more competitive than those in EU. Two thirds of the world's CO₂ emissions come from only ten countries – including China and United States which are the leading emitting economies⁶¹. Only two countries in the top ten CO₂ emitting economies come from Europe.

Chart: Top 10 emitting countries in 2008

⁵⁹ Article 11

⁶⁰ Paragraph 8 of art. 11

⁶¹ CO₂ emissions from fuel combustion – highlights, 2010 edition, International Energy Agency, p. 9



Source: Chart taken from *CO₂ emissions from fuel combustion – highlights*, 2010 edition, International Energy Agency, p. 9

In addition, placing the emphasis on the development of renewable sources by the EU in all member states will mean a rapid increase in the capacity of wind farms. This in turn will lead to an increase in natural gas consumption in the EU.

These actions will bring an increase in production costs and loss of competitiveness on the part of EU economies. On the other hand, the economies of countries neighbouring the EU, including the Russian economy, free of huge costs, will gain an easy way to export its electricity and other products produced by energy-intensive industries.

There are three main possible scenarios in the EU with the following characteristics:

The "Green Scenario"

The EU will continue to promote the development of renewable sources and limits on the volume of CO₂ emissions. In this scenario the increasing importance of natural gas as an energy carrier in the EU will occur relatively rapidly. At the same time, steps to offset the ecological burden between the EU and third countries outside the EU will not be taken⁶². The development of nuclear power will be significantly limited by the actions of environmentalists. Russian companies with access to natural gas deposits will face conditions which facilitate their expansion in an open competitive market. The Russian Federation will receive exemption from the Third Internal Energy Market Package for its infrastructure in the EU (negotiations started during EU-Russia meeting 24th February in Brussels).

⁶² Such compensation could take place through the introduction of an "import emission tax (emission duty)", whose objective would be the leveling of differences in production costs in economies with different environment obligations.



The "Adaptation Scenario"

The EU will not introduce further restrictions on CO₂ emissions in addition to those already introduced. A more restricted approach to environmental protection will be possible only if other countries in the world, the major emitters, accept the same obligations related to climate protection. In this scenario, the growing importance of natural gas will be lower than in the Green Scenario. There will be development of the nuclear power industry because of the need to replace some of the coal powered plants to achieve fewer emissions from base power generation operations. Russia will not receive any exemptions from the rules of the Third Internal Energy Market Package in the EU.

The "Rolling-back Scenario"

A scenario in which – as a result of rising production costs and loss of competitiveness of EU economies, as well as a possible crisis in the EU countries – emission targets will be subject to negative review. Emission limits will be raised. Concurrently, the EU will take steps to offset the burden of the environmental actions between EU countries and those outside the EU. In this scenario, the preservation of existing coal-fired power will be possible (new coal technologies) and the development of the gas market will be the slowest in all of the three scenarios described. The EU will not allow any exemptions for any third country in terms of the application of the Third Internal Energy Market Package.

Table: Characteristics of possible climate/energy scenarios in EU

| | Carbon reduction limits | Introduction of import emission tax | Support of renewable (esp. wind) | Development of nuclear power | Exemption from III Energy Package (OU and ISO) | Natural gas demand | Coal demand |
|-----------------------|-------------------------|-------------------------------------|----------------------------------|------------------------------|--|--------------------|-------------|
| Green Scenario | Higher | No | Yes | No | Yes | ↑↑↑ | ↓↓ |
| Adaptation Scenario | Stable | Yes | Stable | Yes | No | ↑↑ | ↑↓ |
| Rolling-back Scenario | Lower | Yes | No | Yes | No | ↑ | ↑ |



6. SUGGESTION OF POSSIBLE ACTIONS FOR THE EU

6.1. SUMMARY – WHAT HAS AND HAS NOT BEEN ACHIEVED BY THE RUSSIAN FEDERATION SINCE 2000

In the last decade, Russia has consistently strengthened its position in the world by exploiting the international politics of energy resources. The success of Russian policy is a result of the skilful use of natural gas and crude oil as an instrument of foreign policy. On the one hand, Russia is striving to strengthen dependence on Russian hydrocarbons by most of the economies of Central and Eastern Europe. On the other hand, Moscow has consistently strengthened the image of Russia as a stable supplier of natural gas and crude oil in the countries of Western Europe. This is in spite of the repeated interruptions in the supply of hydrocarbons to the countries of Central and Eastern Europe.

The undeniable success of the energy policy of the Russian Federation over the last decade includes projects to construct new corridors for the transport of hydrocarbons to Europe that bypass the existing transit countries. Implementation of projects BPS-1 and BPS-2 will enable increased exports of Russian oil to Europe bypassing Belarus, Poland and the Ukraine. Completion of the construction of the Nord Stream gas pipeline under the Baltic Sea – and in the future the construction of the South Stream – will split Europe into two areas in terms of energy supply. Members of the former Soviet bloc will remain fully dependent on Russian natural gas. However, natural gas can flow to consumers in Western Europe without using the infrastructure of the traditional transit countries in Central and Eastern Europe.

Moreover, the perception by European public opinion of the Nord Stream project as "European" is a success of the policy of the Russian Federation. In fact, this is a project which was implemented in the face of strong opposition of several EU member states – Poland and the Baltic States.

The Russian Federation seeks to maintain the asymmetry between itself and the EU in the liberalised market. The Russians are consolidating and nationalising their energy sectors, eliminating foreign companies from the internal market. On the other hand, Russian companies have access to energy assets located in the EU. A partial failure of the policy of the Russian Federation is the adoption of the Third Internal Energy Market Package in the EU. According to the provisions of the Directive and the so-called 'Gazprom clause', acquiring energy infrastructure by the Russian companies will be much more difficult.

Russian companies place great hope in the EU climate policy that deals with the imposition of restrictions on greenhouse gas emissions by the EU member states, and in the EU policies that promote renewable energy sources. In practice, this will mean a rapid increase in the demand for natural gas. In this light, the EU targets of the 20/20/20 concept and ideas to further reduce CO₂ emissions give a major incentive to the Russian Federation energy companies to become more active on the EU energy market. Concurrently, a big threat to the energy expansion strategy is the development of nuclear energy and what is more important, the possible exploitation of unconventional natural gas in the EU.

Therefore, in the various public discussions in Europe, there will be many attempts to undermine the importance of shale gas extraction and the construction of modern nuclear power plants. It is significant that Alexander Medvedev, the Vice President of Gazprom, on hearing the news of the great success with shale gas and new exploration plans in the United States, began to worry publicly about the quality of drinking water in New York State.



6.2. RECOMMENDATIONS

The European Union as a whole does not have a common energy policy. Decisions on energy are rather the result of the interests of individual member states. The best approach to energy issues in the EU is a collective approach and intergovernmental cooperation in the light of solidarity rule.

The interests of the member states – on matters such as the reduction of CO₂ and promoting renewable energy sources – are radically different and depend in particular on the specific historical and economic conditions such as the energy mix. There are countries that produce most of their electricity from low-emission energy sources (France, Sweden). There are those which abandoned coal as a primary energy source and paid the price for such a switch (United Kingdom, Spain). Finally there are countries for which coal is the primary source of energy. The energy mix in these countries determines the national economy and security interest.

There are extreme differences between the 27 EU states in the area of infrastructure development and the natural gas market. Historical circumstances are also a key factor in this matter. The energy problems of Central and Eastern Europe are incomprehensible to Western Europe. Nonetheless it is these problems which precisely determine the national economy and security interest.

A further tightening of the limits and restrictions on CO₂ emissions by the EU in the absence of similar commitments from countries that are the largest emitters of CO₂, would be extremely detrimental to the economies of the EU. Further obligations would be most detrimental to the countries where coal accounts for a significant share of their energy mix.

Further support for renewable energy based on wind will in fact cause a rapid increase in the demand for natural gas, and create the necessity of building a back-up system of power generation production based on natural gas which is the best energy source to support a wind energy system (as we saw in the case of Spain).

Therefore, the best solution for the entire EU is to implement the **Adaptation Scenario**, if it is considered impossible today to implement the **Rolling-back Scenario**. Attempts to follow the **Green Scenario** are extremely unfavourable.

For energy security in the EU – and for each individual member state and its energy independence – it is essential to promote indigenous sources of energy, and only in the absence of these to support the diversification of routes and sources of energy imports⁶³. The big threat for the EU is the artificial promotion of energy sources which could result in the abandoning of EU energy reserves and would increase energy imports from outside the EU (such as natural gas). The big threat is the withdrawal from the use of indigenous energy resources (such as coal or unconventional natural gas).

In the case of the **Rolling-back** and/or **Adaptation Scenarios**, the EU should promote new coal technology, unconventional gas sources such as shale gas and coal-bed-methane as well as methods of its production. Wind power seems to be a dead end. Most certainly, work on alternative energy sources is highly desirable.

⁶³ Diversification projects are *inter alia* the Nabucco pipeline, Adria LNG and Swinoujscie LNG (and other LNG in Central Europe), North-South gas corridor etc.



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