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1 Introduction

As recently as in November 2008, the European Commission came forward with a proposal of a government-backed consortium of European natural gas buyers in order to encourage the Central Asian and Caspian producers to sell their output to the EU. The proposal is an essential part of the set of measures aimed at diversifying the European energy supplies away from Russia and to improve the energy security of the EU.

The proposal is also closely linked to the introduction of the European Commission's Second Strategic Energy review that further coincides with the decision by the EU foreign ministers to resume talks with Russia on a new Partnership and Co-operation Agreement, discussion on which was suspended after the outbreak of the conflict between Russia and Georgia in August.

The Georgian war has triggered increasing energy supply diversification efforts on behalf of the EU. The Commission more vigorously than ever pushes forward the southern natural gas corridor for imports bypassing Russia. Intensifying negotiations with Azerbaijan, the key supplier of the alternative energy route, and Turkey, the key transit country of the planned energy corridor, are the case in point.

Amidst the intensifying attempts of the EU to diversify away from the Russian-dependent imports, Russia itself is caught in a struggle over deciding which energy routes to prioritise. Until recently, the Baltic Sea has served as the key link in prospects of increasing energy supplies from Russia, along with the development of the Nord Stream gas and BPS oil pipelines and related seaports on the Russian Baltic coast. The recent downturn on the global financial markets, along with the apparent indecision on the part of the EU have, however, cast shadows on the Nord Stream pipeline and related upstream ventures on the Barents Sea.

This report discusses the present and future role of the Baltic Sea region as a corridor of Russian energy supplies to the EU as well as Russia's ability to increase or even retain its energy supplies to the region. In related discussion, the infrastructure developments in the Baltic Sea region are linked with Russia's global energy policy and construction of optional energy export routes from Russia.

2 Overview of Russian related energy influence in the Baltic Sea Region

2.1 Russian equity investments

Russian energy companies have significant investments in the Baltic Sea Region countries. Two things are characteristic for these investments. First, investments and ownership are mainly concentrated in the hands of Gazprom and Lukoil although also the Russian Itera Group does have minority shares in Estonian and Latvian gas distribution companies. Second, investments are clearly concentrated on the eastern and southern coastlines of the Baltic Sea and not so much on the Western coastline, namely Sweden, Denmark and Norway.

The state-owned Russian natural gas and oil giant Gazprom has significant investments particularly in the gas sector in the Baltic Sea Region countries as table 1 below shows. Gazprom owns significant shares of the regions gas distribution and transportation companies in Finland, the Baltic countries, Germany and Poland. However, Gazprom has little ownership in the Scandinavian countries. One reason for this is obviously the fact that Gazprom does not pipeline deliver gas to the Scandinavian countries, unlike in the aforementioned countries.

Table 1 Selected Gazprom's foreign subsidiaries and affiliates in the Baltic Sea Region countries

Country	Company	Type of operations	Gazprom's share, %
Estonia	Eesti Gaas	Gas distribution	37,0
Finland	Gasum	Gas distribution	25,0
	North Transgas OY	Gas transportation	100,0
Germany	Gazprom Germania Group	Gas distribution	100,0
	WIEH		50,0
	Wingas		49,9
	ZMB		100,0
Latvia	Latvijas Gaze	Gas distribution	34,0
Lithuania	Lietuvos Dujos	Gas distribution	34,0
	Stella Vitae	Gas distribution	50,0
	Kaunas CHP	Electricity	99,0
Poland	EuRoPol GAZ	Gas distribution	48,0
	Gas Trading	Sale of gas	16,0

Sources: Company information, Ehrstedt & Vahtra (2008)

The privately held Russian oil giant Lukoil has significant investments particularly in the retail of petroleum products in the Baltic Sea Region countries as table 2 below shows. Lukoil owns a significant amount of petroleum retail outlets in Finland, the Baltic countries and to some extent in Poland. However, Lukoil has little retail ownership in the Scandinavian countries and Germany. Lukoil's retail chain investments are clearly focused on the eastern coastline of the Baltic Sea.

Table 2 Selected Lukoil's foreign subsidiaries and affiliates in the Baltic Sea Region

Country	Company	Type of operations	Lukoil's share, %
Estonia	LUKOIL Eesti	Retail of petroleum products	100
Finland	Oy Teboil	Retail of petroleum products	100
Latvia	LUKOIL Baltija R	Retail of petroleum products	100
Lithuania	LUKOIL BALTIJA	Retail of petroleum products	100
Poland	LUKOIL Polska Sp z.o.o.	Retail of petroleum products	100

Sources: Company information, Ehrstedt & Vahtra (2008)

2.2 Russia as an energy supplier

Russia has a strong position as an energy supplier for the Baltic Sea Region countries. Particularly in natural gas Russia has a significant position as Russia provides almost 50% of all natural gas consumption in the BSR. However, the supply of natural gas is spread most unevenly since some countries import all of their gas from Russia and some do not import gas from Russia at all. Russia is also an important source of oil for the BSR countries. However, oil imports are far less rigid than structurally binding pipeline gas deliveries. Thus the BSR countries are more able to import oil from different sources. In addition, Norway and Denmark are oil exporters themselves thus not dependent on Russian oil.

In natural gas, the Baltic Sea Region is divided into three categories in their gas imports from Russia. First, there are the countries of the Eastern shore of the Baltic Sea, namely Finland, Estonia, Latvia and Lithuania which are practically completely dependent on Russian imports and structurally bound to the Russian pipeline network. Second, there are the countries of the Southern shore of the Baltic Sea, namely Germany and Poland which import somewhat less than 50% of their natural gas from Russia and are structurally bound to several pipeline networks. Third, there are the countries of the Western part of the Baltic Sea, namely Denmark, Norway and Sweden which do not import natural gas

from Russia at all. These countries rely for the most part on the natural gas of the North Sea.

Table 3 Natural gas* trade movements by pipeline and Russia's share of imports in the Baltic Sea Region in 2007

Country	Total consumption * (Bcm)	Russian imports (Bcm)	Russian imports (%)
Estonia	1,0	1,0	100 %
Latvia	1,6	1,6	100 %
Lithuania	3,4	3,4	100 %
Finland	4,4	4,3	98 %
Poland	13,8	6,2	45 %
Germany	85,4	35,5	42 %
Denmark	4,6	0,0	0 %
Norway	4,3	n.a.	0 %
Sweden	1,0	0,0	0 %
Total	**119,5**	**52,0**	**44 %**

* Preliminary figures
Sources: BP Statistical Review 2008, EuroGas, Baltic Gas Association, author's calculations

According to EuroStat statistics, almost all BSR countries are heavily dependent on oil imports. Finland, Sweden, Germany, Poland and the Baltic countries imported in 2006 at least 95% of all the oil needed. However, the most western BSR countries with a good access to the North Sea energy, Norway and also Denmark, are oil exporters and thus not dependent in imports at all. In fact Norway was the second biggest source of EU oil imports in 2006 with a share of over 15% of total imports. The biggest source of EU oil imports in 2006 with a share of over a third of total imports was Russia.

The influence of Russian oil exports is significant in the BSR region as well. For instance, Russia's share of crude oil imports in Finland is approximately 75% (2006). The regions largest consumer of energy, Germany, imports 35% of its crude oil from Russia (2005) thus being overwhelmingly the most important source of crude oil for Germany. Oil imports are not expected to diminish in the long run. On the contrary, the European Commission has forecasted in its report "European Energy and Transport 2030" published in 2007 that oil will remain as the most important fuel in the EU and its consumption will rise by 6% by the year 2030.

2.3 Russian energy infrastructure

The most important energy projects in Europe with Russian capital are the gas pipe line projects Nord Stream and South Stream. The latter is situated in the Balkans far from the Baltic Sea Region but Nord Stream is situated in the middle of the Baltic Sea accompanied with plenty of controversy in the Baltic Sea Region countries. Major pipeline infrastructure which is related to Russian oil in the Baltic Sea Region are the Baltic Pipeline System (BPS) in Northwestern Russia and the Northern Druzhba pipeline in Poland and Germany. In addition, there are deserted oil pipelines to the Latvian port of Ventspils and the Lithuanian port of Butinge with a connection to the Northern Druzhba pipeline. The Map 1 outlines the key existing and proposed energy routes from Russia and Europe.

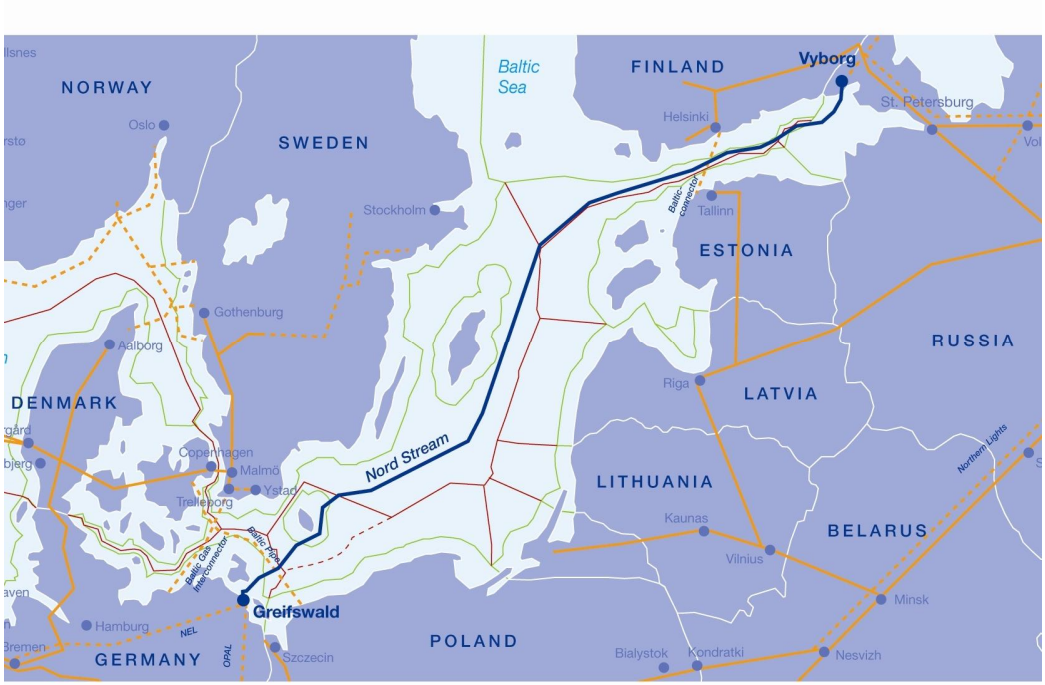
Map 1 Present and proposed oil and gas pipelines from Russia to Europe

Source: Adapted from Energy Information Administration (2008).

The Nord Stream pipeline project is a joint venture by Russian, German and Dutch gas giants. Russian Gazprom has a controlling 51 % share in the project while Wintershall, the German oil and gas branch of BASF and the world's largest privately owned power and gas company E.ON AG both have a 20 % share in the project. In addition, the Dutch gas infrastructure and transmission company Gasunie has a 9 % interest in Nord Steam.

As map 1 below shows, the pipeline will stretch roughly 1 200 km from Vyborg on the Russian Baltic Sea Coast to Greifswald on the German Baltic Sea coast thus bypassing the current major transport countries of Belarus, Ukraine and Poland. The pipeline offers an alternative transport corridor for Russian gas into Western Europe and Germany in particular. The transport capacity of the pipeline in its first phase is estimated at 27,5 billion cubic meters per year in 2011 and in its second phase it is estimated at 55 billion cubic meters per year in 2012. The latest estimated financial value of the project is roughly over $ 9 billion.

Map 2 The planned route for Nord Stream gas pipeline in the Baltic Sea Region



Source: Adapted from Nord Stream AG.

Nord Stream facilitates other investments related to the projects as well. For instance, E.ON. and Gazprom and announced in early 2008 that they have signed a memorandum

to jointly build a 1 200 MW power plant, roughly the same as the producing capacity of an average nuclear power plant. The plant would be situated in Lubmin, Germany which is situated near the planned pipeline.

As Table 4 below shows, in 2007 almost 90 % of Russian oil was exported through Baltic Sea ports (31 %), through the Druzhba pipeline (27%) and through Black Sea Ports (28 %). This entails that over half of Russian crude oil is being exported either through the Baltic Sea Region or to the countries of the region. Hence the Baltic Sea Region oil deliveries have strategic meaning not only for the countries of the region but for Russia as well.

Table 4 Russian Crude Oil Exports by Export Outlet in 2006 - 2007

	2006		2007	
Outlet	**(1000 bbl/d)**	**(%)**	**(1000 bbl/d)**	**(%)**
Baltic Sea Ports	**1 413**	**34 %**	**1 484**	**31 %**
Primorsk, Russia	1 255	30 %	1 484	31 %
Butinge, Lithuania	158	4 %	0	0 %
Druzhba pipeline	**1 261**	**30 %**	**1 299**	**27 %**
Germany	437	11 %	420	9 %
Poland	466	11 %	516	11 %
Others	358	9 %	363	8 %
Black Sea Ports	**985**	**24 %**	**1 361**	**28 %**
Other Non-Transneft Crude oil Exports	**495**	**12 %**	**651**	**14 %**
TOTAL CRUDE OIL EXPORTS*	**4 154**	**100 %**	**4 795**	**100 %**

Source: Adapted from Energy Information Administration (2008)

** Includes non-Russian exports such as trans-shipped oil from Azerbaijan, Kazakhstan and Belarus.*

The Baltic Pipeline System (BPS) is an oil pipeline network in North-western Russia which uses the relatively new Primorsk harbour in the Gulf of Finland near St. Petersburg as its main export outlet. The throughput capacity of the pipeline in Primorsk was almost 1,5 million bbl/d on average in 2007. The Russian pipeline transport monopoly Transneft is the sole operator for the pipe. The BPS is situated entirely on Russian soil which means that Russia has full control of the pipeline unlike in most cases of Russian energy infrastructure directed to Europe where Russians are, to varying degrees, sharing control with their European partners.

An extension of the BPS called Baltic Pipeline System 2, or BPS-2, has been ordered for construction by the Russian government in the spring of 2008. Its planned capacity is 50 million metric tons and planned end point for the pipe line would be in Ust-Luga in the Gulf

of Finland near St. Petersburg. According to the pipeline developer Transneft, the latest estimate for the project value is almost $ 5 billion. The 1 300 kilometres long pipe line was originally proposed in early 2007 to lessen Russia's dependence on Belarus as transit country. Belarus had earlier raised transit duties for oil going through the Northern Druzhba on its way to Poland and Germany. In addition, there are Ukrainian-Polish plans for a competing pipeline for Druzhba running from the Ukrainian Odessa to Polish oil refineries.

The Northern Druzhba pipeline was built in the Soviet times to deliver oil for Eastern European partner countries such as East Germany and Poland. Since the collapse of the Soviet Union, the pipeline has found itself on the territory of Belarus before entering Poland and unified Germany. The pipeline delivered nearly 1,0 million bbl/d of crude oil to Poland and Germany on average in 2007 which is almost 20 % of all Russian crude oil exports. The Northern Druzhba is geographically situated in four different countries. Hence the Russian pipeline transport monopoly Transneft is the operator for the pipe in Russia while Belarus, Poland and Germany have their own national operators.

The Druzhba pipeline has an extension to the ports of Ventspils in Latvia and Butinge in Lithuania. However, these pipelines have been virtually deserted in crude oil exports since Russia has diverted its exports mainly to the Baltic Pipeline System and Primorsk harbour. Table 4 presented on previous page shows clearly how Russian crude oil exports have been diverted from Lithuanian Butinge to other export outlets, mainly Primorsk. In 2006, Butinge port was utilized for exporting 158 bbl/d of crude oil but come to 2007, the port was not used at all for this purpose. The use of the Latvian Ventspils port was abandoned already several years ago due to a dispute between the Latvian and Russian parties over the control of the ice-free port. Latvians refused the Russian bid to buy a controlling stake of the port after which the Russian oil deliveries to Ventspils shortly ended and have not resumed since.

3 Russia's energy resources and supply prospects

Russia is a major global oil and gas producer. The country has the world's largest natural gas and 6th largest oil reserves. Russia has natural gas reserves of 45 trillion cubic meters (tcm) and proven oil reserves of nearly 80 billion barrels (bn bbl), according to the most recent estimates (BP 2008). The country's vast energy reserves are mainly concentrated on only a few areas – the oil reserves are located in Western Siberia, between the Ural Mountains and the Central Siberian Plateau, while the Nenets Autonomous Republic on the Yamal Peninsula holds some two thirds of the country's natural gas reserves and is responsible for over 80% of the current production. The key untapped oil and gas reserves are located in Eastern Siberia, under the Barents Sea and around the Sakhalin Island in Russia's Far East.

According to most estimations, Russia is about to reach its peak oil in upcoming years. Natural gas production is expected to somewhat retain its current annual growth rate of around 2% at least until 2025-2030. The ability to increase or even sustain the current production levels, however, crucially depends on the success of bringing onstream several new major oil and gas fields, in order to replace the already falling production on the existing and mostly depleted super-giant fields.

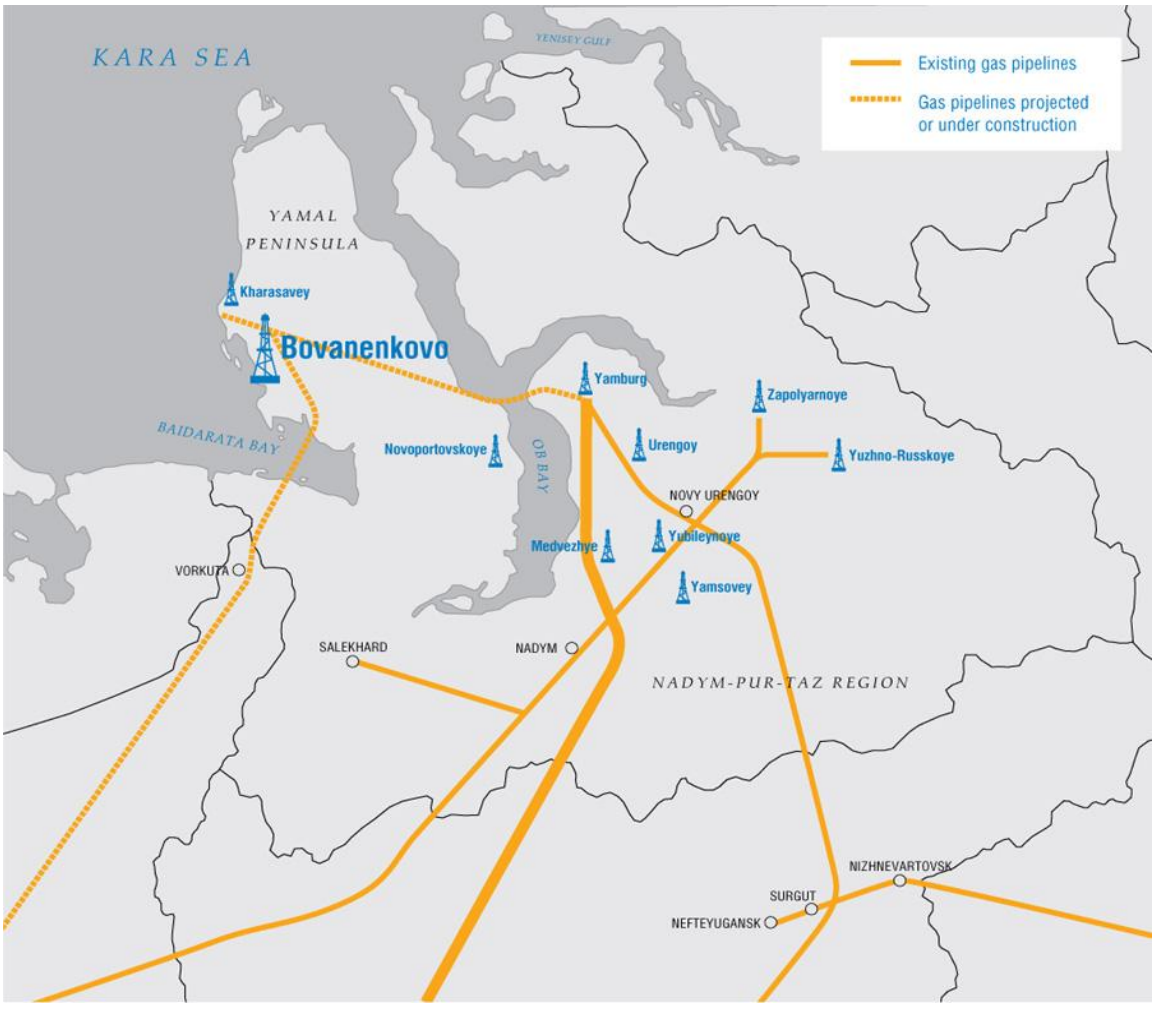
Exploitation of Russia's yet untapped energy reserves and bringing new fields onstream is problematic in several respects. The fields are mainly located in considerably more challenging locations than the existing ones, often requiring state-of-the-art technologies and massive infrastructure investments to develop. The logistical, technological and managerial challenges surrounding the new exploration projects tend to cause considerable delays in bringing onstream the remote gigantic fields.

3.1 The natural gas sector – too little replacement too late?

The Russian natural gas sector is dominated by the state-controlled energy giant, Gazprom. The company is responsible for over 85% of Russia's gas production. In addition, Gazprom controls the Russian natural gas pipeline network and is the sole exporter of gas from Russia. Over 90% of Gazprom's production originates from three giant fields – Urengoi, Jamburg and Medvezhyi – in the Yamal-Nenets Autonomous

District. All three fields have long passed their production peaks; in 2007, the combined production of the three fields decreased by nearly 30 bcm, equating to some 7-8% of Gazprom's total production in 2007. The depleting output from the three super-giant fields has mostly been replaced by the 100 bcm/year-Zapolyarnoe field brought into operation in 2001. Given the increasing depletion rates, however, the production from Zapolyarnoe field alone will not be sufficient to fill the production gap over the next years. In addition, the Yuzhno-Russkoye field, uniting Gazprom and German BASF AG, has provided limited production additions and is expected to reach its full production of 25 bcm annually by 2009. Map 3 depicts the key upstream ventures of Gazprom in the region, as well as the prospected production areas of the Yamal peninsula.

Map 3 Gazprom's key upstream ventures in the Yamal-Nenets region



Source: Gazprom

In order to compensate for the decreasing production on old fields, Gazprom has mainly pushed for development of two key areas – the Yamal Peninsula and the Barents Sea. Gazprom has voiced its plans to open the first of the three new fields, the giant 4.4 trillion cubic meter (tcm) –Bovanenkovo field on the Yamal Peninsula for production by 2011. However, most of the experts regard such a schedule as utterly optimistic. In order to connect the three fields to the existing pipeline system of Gazprom, nearly 3000 km of gas pipelines need to be laid down, mostly under remarkably challenging geographical conditions. In the light of Zapolyarnoe case, and given the even more challenging conditions of Bovanenkovo, the field's full production capacity (140 bcm) will be reached only around 2020. In addition, based on various estimations, the costs for bringing the three new Yamal fields into operations will reach $ 50-70 billion in total by 2030. Regardless of the challenges, however, Gazprom's production growth over the next 10-15 years will largely depend on its success in bringing onstream the new Yamal fields. The current scenario put forward by the company includes slightly decreasing production in the course of next 5-10 years, after which the growth should recur along with the introduction of the new fields.

While the future production increase from the fields on Yamal Peninsula will, for the most part, go into replacing the deflating output from the existing fields, the offshore fields of the Barents Sea, and the gigantic Shtokman field in particular, are expected to be the major contributor to Russia's future gas production growth (Map 4).

Map 4 Shtokman field and prospective supply routes

Source: Gazprom

Russia's ability to feed the projected Nord Stream pipeline heavily relies on the future output of the Shtokman field. One of the largest energy fields in the world, Shtokman contains 3.8 trillion cm of natural gas and 37 million tonnes of gas condensate. The project operator, Shtokman Development Company (SDC) unites Gazprom (51%), France's Total (25%) and Norway's StatoilHydro (24%). At its first phase, by 2014, the field is due to produce some 11 bcm/ year of natural gas for the Nord Stream pipeline and some 7.5 mtn/ year of liquefied natural gas (LNG) to be shipped to Europe and the USA. According to the

scenario put forward by the SDC, the consortium is due to drill some 15 production wells, build two offshore platforms and a 550-km subsea gas pipeline by 2013. Given the mounting challenges, however, most international observers believe that the first output from Shtokman can only be expected closer to 2020. This view is supported by the fact that the SDC has still to finish a feasibility study in order to decide whether the consortium has the technological capabilities to begin the development of the field, and whether it is economically justifiable to start the explorations activities during the current period of lowering oil and gas prices. The project financing remains yet another outstanding issue. The SDC is in the midst of talks with Western banks about financing Shtokman as well as with potential long-term customers for LNG exports. In addition, the recent decision by Gazprom to buy the LNG carriers from South Korea and Japan instead of building them in Russia has extended the estimated project costs by more than $ 1 billion.

As indicated by the recent comments from inside Gazprom, there is a considerable division of opinions among the company's top management on large scale investment projects, mainly concerning the decision to concentrate either on Yamal peninsula or Shtokman. While the official policy foresees development of both projects, the company is likely to face a decision soon between the two options due to the massive costs involved in both of the projects. For a time being, development of the Yamal fields, although enormously costly, seems to be the easier option, since it can most likely be managed by Gazprom alone. Regarding Shtokman, on the other hand, Gazprom lacks experience on offshore and LNG production, the primary reason for eventually involving the two foreign partners in the project. Therefore, it seems likely that once forced to make a choice between the two giant projects, Gazprom will opt for Yamal instead of Shtokman, in turn resulting in mounting challenges to fill the Nord Stream pipeline.

Besides the still remote development scenarios of the new giant gas fields by Gazprom, the most notable phenomenon in the Russian natural gas industry during the recent years has been the rise of so-called independent natural gas producers, currently responsible for some 6-7% of the total gas production. Despite their currently modest share in total output, the production growth of independent producers (on average 10% annually between 2002 and 2007) has by far surpassed that of Gazprom (1.3% annually). In addition, the Russian oil companies, led by Lukoil, TNK-BP, and Surgutneftegaz, have increased their gas production by some 4-6% annually over the past years.

3.2 Has Russia reached its peak oil production?

Russia has been responsible for major part of global oil production increase over the past ten years. More recently, however, doubts have been mounting about whether Russia could sustain its current production levels of crude oil, the country's key source of revenue.

The potential growth in Russia's oil production would primarily originate from the exploration projects on the Sakhalin island in Russia's Far East. During the upcoming decade, only a few major oil fields will contribute to most of Russia's oil supply growth while most of the production on the new smaller fields will go into replacing the decreasing production from the giant mature fields. In short term, however, there are only few new large fields planned to be brought into operation. Those are Gazprom's 100 000 bbl/d Prirazlomnoye field (by 2010), Lukoil's 150 000 bbl/d South Khylchuyu field (by late 2008), and initiation of year-round production (by 2009). In medium term, Lukoil/ ConocoPhillips' Timan Pechora project and Rosneft's 300 000 bbl/d-Vankorskoye and Komsomolskoye fields are also expected to stem production losses at mature fields. In addition, Lukoil expects some 30 000 bbl/d of production from its Caspian fields after 2010.

In 2007, more than 25% (or some 2.5 million bbl/d) of Russia's oil production came from fields that had already produced more than 60% of their total recoverable reserves. Achieving continued growth at the fields beyond their peak production will become more challenging and costly as the oil companies run out easier and cheaper opportunities to manage the depletion rates. In addition the Russian oil infrastructure suffers from serious underinvestment due to high taxes, as the companies have failed to invest in developing new deposits. On the positive side, in early 2008, the Russian Government approved a blueprint on geological research, which stipulates doubling the government funding for all geological research projects up to $ 1.7 per years between 2011 and 2020.

Notwithstanding the aforementioned challenges, in early 2008 the Russian Government announced plans to further raise the country's crude oil production. In March 2008, Russia's Ministry for Economic Development and Trade announced a program to develop the country's energy sector. The blueprint called for raising Russia's crude oil production from 9.87 million barrels per day (mbpd) in 2007 to 11.23 mbpd by 2015, 11.94 mbpd by 2020 and 12.04 mbpd by 2030.

Despite these optimistic plans, however, Russia's crude output has been declining since late 2007 for the first time after a decade of oil production growth. According to the Russian Ministry for Industry and Energy, the production in April was down to 9.72 mbpd, from 9.76 mbpd in March and more than 2% lower than the post-Soviet high of 9.93 mbpd in October 2007. In the first quarter of 2008, Russia's crude output was down 1% from the first quarter of 2007, according to the governmental data.

Amidst the declining production, most industry insiders and top managers of private oil producers have voiced serious doubts about whether the governmental plans on production hike are feasible. According to deputy CEO of Lukoil, Leonid Fedun, sustaining the levels of 8.5 to 9 mbpd over the next 20 years is unlikely and would require dozens of billions of investments over the next few years. In contrast, the managers of state-run oil companies tend to share the official view with the CEO of GazpromNeft, the oil-producing subsidiary of Gazprom, claiming that Russian oil output would continue to grow until at least 2030 with no significant production decline in sight before that. Similarly, the CEO of Russia's oil pipeline monopoly, Transneft, stated that the country's oil production would go up by some 1.2 mbpd by 2012.

Currently, the oil sector taxation remains one of the key outstanding issues defining the future oil production in Russia. Both private and state-owned companies have lobbied for tax cuts on oil production. Oil companies cite high taxes and rising costs as major reasons for the decline in production. Russia's oil executives have suggested various tax relief schemes, mainly including lower taxes for new deposits. Nonetheless, the Russian Government raised oil export duties in July 2008 to a record-high $ 482.80 per tonne, resulting in a 9% drop in exports in August (to 5.6 mbpd). The government normally reviews export duties on a bimonthly basis, reflecting changes in the Urals crude oil price. As of recent, the government has dramatically lowered the export tax on oil, to $ 287 in November, spurring cautiously optimistic reactions among the oil companies, on revival of export s.

In its ambitious plans to raise the country's oil production, the Russian Government evidently relies on state-owned companies. In the aftermath of takeovers by the state-owned Gazprom and Rosneft of formerly private oil companies, the state's share of Russia's oil production has risen to more than 40%, from a mere 5% in 2000. In particular, the country's leading oil producer, Rosneft, the owner of the key assets of the once-largest

Russian oil company, Yukos, has pledged to extend its oil output to 3.2 mbpd by 2015 and further to 3.4 mbpd in 2020, up from the estimated 2.2 mbpd in 2008. Even more ambitious plans were disclosed by GazpromNeft, to raise its oil production up to 1 mbpd in 2008. In addition, acquisition of new assets would allow GazpromNeft to pump up to 1.8 mbp per year and quadruple its reserves by 2020 – a scenario that foresees further state control over the Russian oil sector.

4 The Baltic Sea Region and Russia's global energy strategy

4.1 Analysis of Russian energy strategy in the Baltic Sea Region

The current and future energy solutions in the Baltic Sea Region are certainly highly dependent in Russian energy. Hence it is of outmost importance to understand the strategic goals of Russian energy policy. What kind of strategic motivations shape Russian energy policy in the Baltic Sea Region? This question will be discussed in this chapter.

Russian energy infrastructure in the Baltic Sea Region (BSR) should be analyzed in its totality which in practice means three things. Firstly, the Baltic Sea Region should be analyzed as a geographic entity which is subordinate to the global Russian energy strategy. In other words, geographically remote Russian energy sector developments for instance in the Black Sea Region and in Asia have an influence on the Baltic Sea Region energy sector developments as well. Secondly, the important Russian oil exports in the Baltic Sea Region are often overshadowed by gas or even only by the construction of the Nord Stream pipeline. However, the often neglected Russian oil is an important feature of Russian energy influence in the Baltic Sea Region as well. Finally, Russian motives regarding the Baltic Sea Region energy questions are often shaped by not only economic and but also by political goals.

Russian energy decisions in the Baltic Sea Region are influenced by several factors. However, these factors are usually shaped by Russian strategic motivations. In the Baltic Sea Region context, the following three Russian strategic motivations are of most importance: Firstly, the large energy market at the Southern Baltic, Germany in particular, has a major influence on the Baltic Sea Region energy infrastructure as a whole. Secondly, the general trend of bypassing the Central and Eastern European (CEE) transit countries from the Northern and the Southern flanks of Europe on economic grounds. Thirdly, and closely related to the previous, using energy to enhance also political goals in the Baltic Sea Region countries, particularly in the Baltic countries.

Firstly, the large energy market at the Southern Baltic, Germany in particular, is a major factor influencing the Baltic Sea Region energy infrastructure. From Russia's point of view, the large energy consuming German and West European markets are the most interesting ones in the Baltic Sea Region. This is obviously defined by the sheer magnitude of the

German energy market which consumes twice as much Russian gas than all the other Baltic Sea Region states put together. For instance, even in oil the Northern Druzhba pipeline alone delivers over a fifth of all exported Russian crude oil to the Southern Baltic countries of Germany and Poland. On the top of the total figure comes obviously also crude oil exported by other means. Thus the Eastern Baltic market pales in comparison to the South. On the other hand, the Western Baltic is quite independent from both Russian gas and oil exports. Thus Russian energy strategy in the region is certainly focused in the relationship with Germany which leaves Russian energy strategy in the other Baltic Sea Region, particularly in the Baltic countries, subordinate to this.

Secondly, Russia has economic goals in bypassing Central and Eastern European countries on new and planned energy export routes on the Northern and Southern flanks of Europe. This has lately been evident in plans to construct huge gas pipelines both in the Baltic Sea Region (Nord Stream) and in the Black Sea Region (South Stream). The Nord Stream pipeline would enable Russia to avoid the transit fees it is obliged to pay for e.g. Belarus and Poland before exported gas and oil reaches Russia's primary market in the Baltic Sea Region – Germany.

Thirdly, Russia has political goals as well in bypassing the traditional gas and oil transit countries in the CEE countries. When it comes to energy, economic and political motives frequently overlap or even merge and Russian energy motivations do not constitute an exception. On the gas side, Nord Stream has also significant political effects particularly for Poland and the Baltic countries. Should the new pipeline be built, Russia would no longer be dependent on the decisions of transit countries regarding gas exports to the lucrative Western European market. In addition, Russia would gain considerable amount of bargaining power regarding the price of gas exported to the afore mentioned countries.

On the oil side, the Baltic Pipeline System (BPS) has also had a significant political effect on the region. Just like in the case of gas, Russia is rerouting its oil exports from the CEE countries to the Northern and Southern ends of Europe. Russian oil exports are being handled more by Russians ports in the Gulf of Finland and in the Black Sea Region than by ports in the Baltic countries or by the Northern Druzhba pipeline. The construction of the Baltic Pipeline System has given Russia full control over the oil transport that was previously partly exported through the Baltic ports of Ventspils and Butinge. As in gas, Russia is no longer dependent on the oil transit countries regarding the profitable Russian

oil exports. This in turn has given Russian more political bargaining power over Latvia and Lithuania.

4.2 South European energy links – competing with the Nordic option?

In order to substantiate the analysis on the role of the Baltic Sea region in Russia's global energy strategy, in following, we shall look into key energy infrastructure projects elsewhere in Europe, and, in the following subchapter, in the South-East Asian direction.

As discussed earlier, the Russian energy export strategy involves directing the exports to the northern and southern flanks of Europe, in order both to economize on export costs and diminish the political leverage of the transit countries of CIS and Central and Eastern Europe. While the key northern export routes, including the Nord Stream pipeline and Baltic Pipeline System have already received extensive coverage in earlier chapters, we will next focus on the key southern energy export routes, namely the projected South Stream and Nabucco gas pipelines as well as the development of oil pipeline networks in Southern Europe and Caucasus as shaping Russia's global energy policy.

The South Stream gas pipeline project uniting Russia's Gazprom and Italy's Eni on a 50%-50% -basis involves a 900-km subsea pipeline from the Russian port of Tuapse across the Black Sea to Bulgaria. From Bulgaria onwards, the project includes two onshore routes, one running through Greece to Italy and the other running north either through Romania or Serbia and through Hungary to Austria. Hence, the 30 bcm/ year South Stream pipeline would allow exports of Russian gas directly to the EU consumers, without passing any transit countries in the inflammable Caucasus region. The prospected South Stream pipeline is vigorously contested by the Austrian OMV-led Nabucco project, projected to run from Baku, Azerbaijan through Georgia and Turkey to Bulgaria and further to Austria, crossing either Romania or Serbia and Hungary. As the Azeri output alone will not be sufficient to fill the planned 31 bcm/ year Nabucco pipeline, the key concern of the OMV-led consortium is to secure sufficient amount of gas from Russia. However, a quick reality check shows us that finding the gas to fill so much as one of the two contesting pipelines could be a problem. Both the South Stream and Nabucco consortiums have, unsuccessfully, been trying to secure gas deliveries from the BP-led Shakh Deniz project in Azerbaijan, the output of which suffers from serious price disputes between its project

operator and the Turkish pipeline operator exporting a major part of the output. As a result, South Stream consortium is looking at the option of using the output from either the Gazprom's West Siberian fields or from the projected 4.4 tcm Bovanenkovo field in the Yamal peninsula (see also chapter 3), due to come onstream in 2011. In relation to utilizing the output from Bovanenkovo to fill the South Stream, however, to major issues arise, namely the need to upgrade the gas pipeline infrastructure in order to deliver the 30 bcm/ year from the northern Yamal peninsula to the South of Russia, and the need for Bovanenkovo gas elsewhere in Russia to offset the declining production from Gazprom's mature fields.

These considerations inevitably bring us back to the situation on the Baltic shore and to prospects and viability of the Nord Stream pipeline in particular. Following the mounting suspicions about the future and time schedule of the Shtokman project (see chapter 3), the Nord Stream is increasingly dependent on the prospected output from the new giant fields on Yamal peninsula, and, in the short-to-medium term, on the Bovanenkovo fields in particular. As Gazprom is simultaneously developing two giant infrastructure projects on the opposite flanks of Europe, the company will eventually need to prioritise between the two. It looks increasingly likely that both of the pipelines would heavily rely on the Yamal output, meaning that Gazprom needs to make a strategic decision on building the necessary multi-billion infrastructure to feed either one. Simultaneously, the company faces mounting pressure to supply the domestic consumers with the projected output from Yamal in order to fill the production gaps left by the declining output from its giant mature fields.

Finally, considering the decision of whether to supply the Nord Stream or the South Stream with gas from Yamal, there are two key issues that speak for the latter. Firstly, although requiring massive and costly upgrading, the pipeline infrastructure to the Black Sea coast (and to feed the South Stream) is already in utilisation, whilst supplying the Nord Stream route requires construction of a partially new route from Nadym in Westrern Siberia to the Baltic seashore (Gulf of Finland). Secondly, directing the Bovanenkovo gas to the south would, in any case, leave the strategic option of developing the LNG production on the Barents Sea, with subsequent prospects of supplying the European markets by LNG carriers. This way, in principle, both the southern and northern supply routes could be utilised for the purposes of gas exports. In contrast, in case the Yamal gas

is supplied to the Nord Stream pipeline, the southern export route would face serious problems with its utilisation due to the apparent lack of gas to fill the pipelines. This consideration recently gained on relevance, as the Prime Minister of Russia, Vladimir Putin, stated in November 2008, that unless the European countries will swiftly move forward with their approval of the Nord Stream project, Russia will need to consider building LNG plants on the Barents Sea for export purposes.

As shown by the preceding considerations, Russia effectively pushes for dividing the front of European countries by simultaneous development of two largely competing energy export routes. It has become clear that Russia (or even the Nord Stream/ South Stream project consortiums) neither possess the financial resources to simultaneously carry out the two massive infrastructure projects nor could it reach the required output levels of natural gas to sufficiently fill the two pipelines in the medium term. The current developments both in the Russian upstream and infrastructure fronts suggest that in the contest between the northern and southern project, the latter is likely to draw the longer straw.

4.3 Arising competition from the East

Besides the apparent drive of Russia to divide Europe with two competing infrastructure projects, the country's global energy strategy involves tightening co-operation with China and the South-East Asia, both in the upstream and downstream. Despite their physical distance from the Baltic Sea region, the key upstream developments in the Russian Far East as well as the planned infrastructure projects connecting the fields in Eastern Siberia with China, Japan, and South Korea are discussed in following in order to place the Baltic Sea region in the context of Russia's global energy policy.

Currently, the project linking the energy fields in Russia's Far East with the end markets of the South-East Asia that is closest to its realisation is the East Siberia-Pacific Ocean (ESPO) pipeline. The 600 000 bpd -route is designed to supply Japan and South Korea with the Russian crude oil mainly from the Taishet and Talakan fields. Currently, the first stage of ESPO ending at Skovorodino in Russia's Far East, near the Chinese border, is under construction, while the second phase linking Skovorodino and Kozmino is due to be opened 2010. Currently, the key question hanging over the project is whether a link will be

built from Skovorodino to the border with China. While both Rosneft and Transneft, the leading Russian partners of the project, have, in principle, agreed on construction of the link, complicated talks on the prices of the crude supplies are been carried out. The Chinese link would carry 300 000 bpd of Russian crude to the border, from where it would run to Daqing and further to refineries in northeast of China.

In the natural gas sector, Russia has long pursued negotiations with China, to start pipeline deliveries in 2011. Despite the extensive negotiations, however, decision on building the infrastructure has yet to be taken. Recently, Russia reached an agreement with South Korea instead, to start the gas supplies to the country by 2010. According to the agreement, it remains to be decided by Gazprom and the its Korean counterpart, the national energy company Kogas, whether the gas will be supplied by pipeline or as LNG. In case the companies opt for the pipeline, the route will run from Vladivostok in Russia's Far East through North Korea to South Korea. The supplies are to amount to 10 bcm/ year, mostly originating from east Siberia and the Sakhalin island. Although Kogas has repeatedly expressed its willingness to co-operate with Gazprom in developing both the Sakhalin and Far-eastern gas fields, the Russian company has deemed limiting the co-operation to the supplies only.

In several respects, Gazprom's deal with South Korea seems more viable than its fruitless negotiations over pipeline deliveries of natural gas to China. The negotiations with China have envisaged initial deliveries from Western Siberia through an newly built pipeline, while the South Korean deliveries would originate from much closer fields of Sakhalin, utilizing for most part either the existing infrastructure or the routes that are already under construction. Further, South Korean is ready to pay higher price for its gas than China.

Apart from the projected pipelines, the South-East Asian markets are due to be supplied by the LNG exports from the Sakhalin 2 project, 51%-controlled by Gazprom. The project operator, Sakhalin Energy, plans to launch the LNG exports by February 2009. In the first phase, the annual output is expected at 4.8 mtn/ year, with supplies directed to Russia's mainland, Japan, and South Korea.

Although not directly competing with the Baltic and the European markets over the Russian oil and gas supplies, the upstream and infrastructure developments in Russia's Far East are likely to have some immediate effects on the energy balance on the Europe

as a whole. The future role of the Baltic Sea region in the context of Russia's global energy supplies will be addressed in following.

4.4 Prospects for the Baltic Sea region as a market for Russian energy supplies

In a quest for retaining its global energy might, Russia is pursuing its interests on a wide frontier. Pushing forward numerous large-scale infrastructure projects, Russia first and foremost attempts to scale up its export capacity, in order to gain strategic leverage over its target markets. Amidst the rapidly falling energy prices of recent months, however, Russian companies have been forced to revise their investment plans, putting in question development of several key upstream and downstream projects worldwide.

The Baltic Sea region and Europe as a whole are all but unaffected by the recent changes on the global financial markets. As the key infrastructure projects in the region, the Nord Stream and BPS-2, inevitably compete with the giant projects both in the Southern Europe and the Caucasus, as well as with the projects in the South-East Asia, a global view needs to be employed in order to evaluate the future of Russia's energy supplies to the region.

The Nord Stream gas pipeline and the planned extension of the Baltic Pipeline System, Baltic Pipeline System 2 (BPS-2), are the core Russian projects shaping the energy infrastructure in the Baltic Sea Region in the near future. The schedule of the Nord Stream project may prove to be somewhat too optimistic due to the challenges the pipeline has encountered. Many Baltic Sea Region countries have opposed to the pipeline to various degrees and on various grounds and they have been able to slow down the project. In addition, the financial crisis of fall 2008 has weakened Russia's ability to invest in large scale projects such as Nord Stream.

Thus, in the face of sharply falling energy prices, the Russian companies are more than ever bound to re-evaluate which projects to prioritise. From the Baltic viewpoint, among the key decisions to be made, is that on the future of Shtokman offshore development project, designed to supply the Nord Stream gas pipeline. During the past months, head of the Shtokman Development Company, Yury Komarov, has repeatedly stated that the future of the Shtokman project is threatened amidst the tightening financial conditions. Even under more favourable conditions, Gazprom would most likely be forced to make a decision between its two key development areas, namely the Barents Sea (and Shtokman)

and the Yamal peninsula. The picture is further complicated by Russia's strategic decision on which energy route to prioritise – the Nord Stream or the South Stream. While the final decision remains to be made, the recent messages from upstream – whether there is a sufficient amount of gas to be found to supply the potential route – have cast mounting doubts on the Nord Stream venture as a whole.

As an option to the pipeline gas deliveries to Europe, Russia has suggested developing its LNG technology, on which it has recently gained experience on the Sakhalin Island. While the LNG exports to Europe would provide perhaps a more flexible option for European supplies, the large-scale development of offshore LNG fields on the Barents Sea and off the Yamal peninsula is still shadowed by considerations on the arising technological and financial challenges, which Gazprom is unlikely to be able to meet alone.

The future of the BPS-2 project looks uncertain mainly for three reasons. Firstly, the whole project has been deemed as a political one by several sources. Even the former CEO of the Russian pipeline operator Transneft has reportedly described BPS-2 as an "absolutely unprofitable political project". Second, there might not be enough oil for the pipe. BPS-2 has to compete for crude oil with the planned East Siberia-Pacific Ocean pipeline (ESPO) with a capacity of 80 million metric tons. In addition, Russian refineries are increasing their refining capacity all the time. Thirdly, during the fall of 2008 oil prices have been decreasing after a period of record high prices. All this leaves question marks over the BPS-2 project and the adequacy of crude oil for all projects in Russia.

It seems ever more likely that, despite its clear-cut strategy of simultaneous infrastructure development on the opposite flanks of Europe as well as on its eastern border, Russia is bound to limit both its infrastructure and upstream investments in a medium term. This is likely to result in prioritizing the projects already well under way such as the first phase of the eastern ESPO project and infrastructure development on the Yamal peninsula. As of the Nord Stream and South Stream projects, considerable delays will be witnessed in their implementation. Even more so, initiation of the adjacent Shtokman development project will likely be put on hold at least until 2010.

5 Conclusions

The development of Russian energy investments is of vital importance for the future of the Baltic Sea Region energy infrastructure. Russia has already significant investments in the oil and gas sectors of the region, mostly through the state owned Gazprom and the privately held oil company Lukoil. Russia has an important role as an energy supplier as well. Finland and the Baltic countries are in practice totally dependent in Russian gas deliveries and even the biggest gas consumer of the Baltic Sea Region, Germany, imports over 40% of its gas from Russia. In addition, over half of Russian crude oil is exported either through the Baltic Sea Region or to the countries of the region. Key regional infrastructure in Russian oil exports are the Northern Druzhba oil pipeline in Poland and Germany and the Primorsk oil harbor in Russian Gulf of Finland.

The Baltic Sea Region countries can be categorized into three groups in regard to dependence on Russian energy supplies and according to the national energy market size. The Eastern countries of the region, Finland and the Baltic countries are very dependent of Russian energy but from the Russian point of view, they represent a small market for energy exports. The Southern countries of the region, Poland and particularly Germany are less dependent of Russian energy but from the Russian point of view, they represent a large and lucrative market for energy exports. However, the Western countries of the region, Denmark, Norway and Sweden represent a small market which is not dependent on Russian energy.

The Southern, Eastern and Western parts of the Baltic Sea Region thus have different roles in their energy relationship toward Russia. The Southern part, Germany in particular, has a major influence over the energy infrastructure of the whole region. As long as Germany alone consumes over twice as much of Russian gas as the other Baltic Sea Region countries put together, it is obvious that the Russian energy strategy in the region is focused on Germany which leaves the Russian energy decisions for the rest of the Baltic Sea Region subordinate to this. The planned Nord Stream project is a case in point. Here the converging Russo-German energy interests have left especially the small Baltic countries in the shadow when new key regional energy infrastructure is being planned.

Recently, the lack of cohesion in the EU regarding the Nord Stream pipeline has cast a shadow over the project's future. As a response to the Union's indecision on the matter, Russia has presented the option to direct the supplies elsewhere. In addition, Russia's gas supply prospects currently do not support the building of the Nordic gas pipeline, as the development of the Shtokman field is likely to be put on hold.

The Nord Stream route inevitably contests with the southern European energy link, again the main competitor for the EU-backed Nabucco pipeline, which would supply Azeri gas to the Union bypassing Russia. Both the supply and energy policy considerations currently speak for the construction of the southern energy route, which, amidst the seriously deteriorated conditions on the global financial market, would mean postponement of the Nord Stream project.

Among the Russian energy export routes currently under construction, the East Siberia-Pacific Ocean (ESPO) –oil pipeline is closest to its completion, partially indicating the slowly changing energy supply policies of Russia. Although not in a direct competition with the northern European natural gas routes, the increasing focus on developing the eastern energy links sends a clear-cut message to the EU. Intensifying talks with China on construction of a link from the ESPO pipeline to the Russian-Chinese border also serve as a case in point.

The future position of the Baltic Sea region as a market and channel of Russian energy supplies is bound to become more limited in case the key infrastructure projects in the region are put on hold, an event that currently appears ever more likely. While Russia will remain a key energy supplier in the region without any doubt, the future strategic importance of the Baltic Sea region for the European Union as a whole is far less clear-cut.

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