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The EU-Russia gas connection: Pipes, politics and problems

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Foreword

Siberian Blue Gold caused cold in South-East Europe at the beginning of this year, when the natural gas deliveries from Russia via Ukraine to the EU were stopped for a few weeks. This non-delivery, not the first time this has occurred, has finally forced the EU politicians into a re-think about the Union's energy security and Russia's reliability as an energy supplier.

In order to aid this evaluation process, the Pan-European Institute has approached several intellectuals to offer their view on the EU's gas imports and assess the various pipeline alternatives proposed. This report provides a reader with a comprehensive information basis and an objective starting point for a larger debate on the issue, which will determine the energy security of the EU and its neighbours for decades to come. The generations of tomorrow will judge us through the decisions and actions we will take today.

The discussion on the European energy issues will be continued in the publications of the Pan-European Institute and economic monitoring reports, namely Baltic Rim Economies review. The aforementioned publications and reports are free of charge and available to all the audience at the Pan-European Institute's website indicated below.

I wish to thank all the writers and the following Finnish research foundations which have made it possible to conduct this report and numerous earlier studies linked with the theme; Emil Aaltonen Foundation, Foundation for Economic Education, Jenny and Antti Wihuri Foundation, The Marcus Wallenberg Economic Foundation and The Paulo Foundation.

Turku, April 14th 2009

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European security of gas supply - A new way forward

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Foreword

It is March 2009. The European Union has once again been surprised and shaken by a cut in Russian gas supplies in the middle of winter. Bulgaria was hit hard. Ukraine seems to be on the verge of collapse. Less than one year ago, Russian tanks rolled into the sovereign state of Georgia, and imposed on the world a de facto annexation of two parts of that country's territory. For a few tense months in late summer and autumn 2008, many wondered how far relations between the Russian Federation and the Euro-Atlantic community would fall. Paradoxically, the onset of a global financial and economic depression seemed to offer a temporary reprieve. However there is little doubt that Europe went through a dangerous phase. US Vice President Joseph Biden summarised the situation succinctly in his speech at the 2009 Munich Security Conference, stating that "*the last few years have seen a dangerous drift in relations between Russia and the members of our Alliance*". While the new administration of US President Barack Obama is attempting to re-define the parameters of US-Russia relations, the strategic question of Europe's energy supplies remains on the table, partly unsolved, and potentially subject to further tensions and disagreements. However the United States will not, and cannot, solve all of Europe's problems. The time has come for Europeans to make their own contribution to the future strategic stability of their continent.

Introduction

The European Union is in many dimensions a global heavyweight. It is the world's largest economy as well as its largest trading block. It has a population of roughly half a billion inhabitants, with very high average income levels, and is for most goods and services the world's largest market. On the other hand, the European Union presents a number of structural weaknesses. Its internal political cohesion is far below that of a federal state, as crucial areas of policy, notably foreign policy, security and defence policy, and indeed energy policy, are still mostly in the hands of the governments of its member states. Moreover, and this compounds the latter in the current debate, it has very low domestic reserves for all major types of fossil fuels, in particular crude oil and natural gas, but also coal. At the same time, the European Union has set ambitious targets for itself in terms of reducing greenhouse gas emissions, and is naturally not immune to global geopolitical developments, which, moreover, potentially affect the Union in a highly asymmetric manner.

On the other side of the debate one finds the Russian Federation, a great nation that has taken a wrong turn on its way to democracy. Russia's vast resources can be a gift or a curse for Europe, depending on what strategies are pursued. The Russian Federation has pursued a careful strategy of divide-and-rule over the European Union and is likely to continue to do so in the future. That strategy can however be countered.

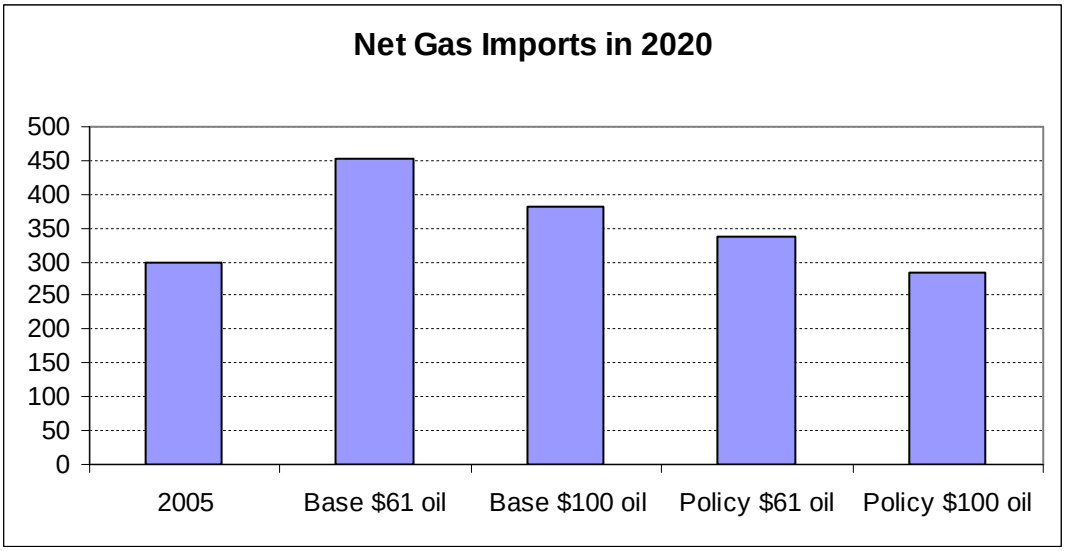
EU demand scenarios and demand-side policies

The European Union is the 2nd largest regional market for natural gas, closely behind North America. However, in great contrast to North America, the EU as a whole has relatively small natural gas reserves and a fast increasing import dependence ratio. This is in part due to the fact that UK and Danish North Sea gas reserves, the bulk of EU gas reserves, will be almost completely depleted by 2015. General EU gas consumption is already high. In addition, environmental policies are incentivising countries and industry to shift their energy product mix in favour of natural gas. Older regulations with respect to sulphur emissions already favoured natural gas over coal or fuel oil. Moreover, natural gas is less CO2 intensive per unit of energy than coal. Therefore, in the absence of any strategic or national security imperative, current policies naturally encourage both governments and industry to demand more natural gas.

Fortunately there are a number of ways in which these trends can be forestalled, and in this respect environmental policies can make a favourable contribution if they are adequately designed. The European Union recently committed to the 20-20-20 initiative. The vision was proposed by the Commission, and endorsed in 2008 by the Council (the member states) and by the European Parliament. The goal of the 20-20-20 initiative is that by 2020 the EU should be emitting 20 % less greenhouse gases as compared to 1990 levels, it should have a share of renewables in its energy mix equal to at least 20 %, and its energy efficiency should improve by at least 20 %. That general strategy is forecast to yield favourable results in energy security terms. A lower energy intensity as well as a higher reliance on renewables both lead, ceteris paribus, to lower demand for natural gas, and hence to lower demand for imported natural gas. On the other hand, the goal of reducing greenhouse gas emissions can lead to perverse incentives from an energy security viewpoint. Naturally, climate change must be tackled, and the only currently available policy is to reduce the volume of

combustion of fossil fuels. Given more general constraints on prices and technology, non-renewable fossil fuels (oil, gas, coal) are widely predicted to remain by far the most important component of the global and European energy mix for the next few decades. Innovative solutions such as carbon capture and storage (CCS) are being actively pursued at the pilot level by leading energy companies and are strongly encouraged (also financially) by the EU and many member states. That said, in the absence of CCS, the EU's Emissions Trading Scheme (EU ETS) naturally incentivises natural gas over other fossil fuels. This has contributed to what has been dubbed the 'dash for gas', and these incentives, far from being removed, will in fact increase over the next decades. As a result, the relative shift in favour of natural gas will continue over the next years. On the other hand, this shift will be limited in absolute value, because the emissions targets are absolute targets, not relative ones. The ultimate combined effect of these policies and incentives is a complex quantitative question, and is best assessed using carefully calibrated simulation models such as those used by the IEA or by the Commission. Concerning the 20-20-20 initiative, the most recent scenarios available in the public domain are shown in Figure 1. These are based on scenarios simulated with the PRIMES energy model, which is the model of choice for such questions at the EU level.

Figure 1. Net import demand for natural gas, annual, bcm



Source: DG Energy and own calculations

Figure 1. shows the net gas imports of the European Union in 2020 according to four different scenarios. The first two scenarios are baseline scenarios ('Base'), assuming that the 20-20-20 initiative is not implemented. Of these, the first scenario assumes a

relatively low average oil price of $61 per barrel over 2008-2020; the second scenario assumes an average oil price of $100 per barrel. The last two scenarios ('Policy') assume that the 20-20-20 initiative is adhered to, with two variants for the oil price assumptions as mentioned. Given that the 20-20-20 initiative has now been committed to, one should focus on the last two scenarios. What is remarkable is what difference the 20-20-20 initiative makes. In the low oil price scenario without the new policy, developments would lead to a race for gas resources in Europe's neighbourhood and beyond. As we will see in next section, Russia would be quite unable to increase supplies sufficiently, and the EU would be forced to import large amounts from Iran and a number of other suppliers. With the 20-20-20 initiative and low oil prices on the other hand, demand would only rise by about 30 bcm per year by 2020 as compared to the 2005 level. If oil prices are high over the period as shown in the last scenario, the EU would be importing less natural gas by 2020 than it was in 2005, a remarkable achievement which would make additional pipeline transportation capacity into the European Union wholly unnecessary. This is a fundamentally important insight. If the 20-20-20 targets are met, and if additional transport capacity is built, both existing and new pipelines will be operating well below full capacity, if new capacity is built at all. This finding has important implications and will be re-discussed at the end of the article.

Russian supply potential

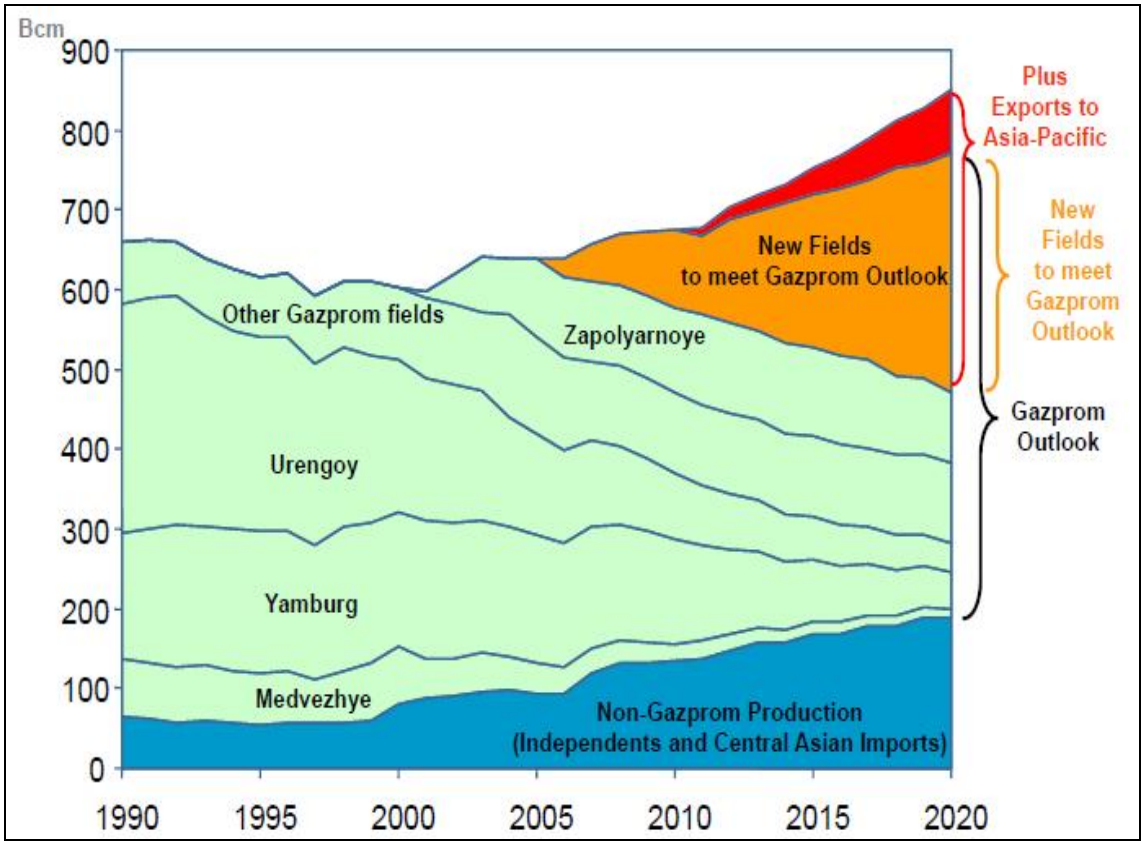
The Russian Federation holds the largest proven gas reserves in the world, with roughly one quarter of the global total according to BP (2008). As an important aside, Iran and Qatar hold the next two largest proven reserves, with 15.7 % and 14.4 % of the global total respectively. Africa as a whole has 8.2 %, while Middle Eastern countries other than Iran and Qatar hold a further 11.2 %.

What is striking, however, is that there are serious concerns about whether Russia is able to meet all of its supply commitments, both now and over the next few years. These doubts started to be expressed very forcefully starting in 2006, both by energy sector analysts from the private sector, see e.g. UBS (2006), by analysts from the independent sector, notably Riley (2006), from independent Russian experts, notably Vladimir Milov, and from international organisations, in particular the IEA through numerous reports and presentations. Three core structural issues are at stake: Russian domestic production, given the decline rates of existing fields and uncertainties and

possible delays with new fields (particularly Yamal, not to mention Shtokman); Russian domestic consumption, which without substantial domestic price increases or other policies would be expected to increase due to economic growth and increasing gasification; and the role and importance of Central Asian gas imports, as well as independent Russian gas producers, as a necessary balancing item in Russia's net export position.

A thorough analysis of these questions would be beyond the scope of this article, particularly given the lack of precise and reliable information on some of the key components, in particular the true decline rates of existing Russian fields, and the exact volumes coming in from Central Asia. The other elements, particularly Russian domestic gas consumption, and the timing and availability of resources from new fields, are also subject to considerable uncertainty and are therefore difficult to predict. That said, an overview of some of the key elements is shown in Figure 2.

Figure 2. Russian gas supply outlook to 2020



Source: Ramsay (2008)

As shown in Figure 2, which is the result of IEA estimates, production from existing

Gazprom fields is forecast to decline considerably up to 2020. Two solutions are however predicted in order to avoid a supply shortfall: an increase in the sum of production by independent Russian producers and imports from Central Asia; and substantial production from new fields. Russia's domestic consumption of natural gas amounted to around 450 bcm in 2007 according to IEA (2008b). With total supplies (including Central Asian supplies) amounting to around 650 bcm per year, Russia's net exports are currently around 200 bcm. As is clear from those proportions Russia's position is currently very tight, and therefore the ability of Gazprom to fulfil all of its supply commitments is highly sensitive to changes especially on the supply side. As is clearly visible from Figure 2 a delay in the availability of production from new fields – even by just a few years – would have an immediate and highly deleterious effect on Russian supply potential. Paradoxically perhaps, the risk of insufficient supply is therefore higher today than it will be in, say, 10 years time, provided the core assumptions underlying Figure 2 are accurate.

Changes to Russian consumption patterns could also have a substantial effect on export potential: an efficiency improvement of just 10 % would free up 45 bcm per year, almost a quarter of current exports. The Russian authorities have committed to raising domestic gas prices so as to bring them close to (or at) netback prices, i.e. the price of sale on foreign markets minus transportation costs (and other export-related costs). Full netback pricing would theoretically make Gazprom indifferent between foreign and domestic sales. Assuming that the foreign sales price based on the Baumgarten formula is used, this would mean that domestic Russian prices would evolve, with a time lag of roughly 6 months, in line with the price of crude oil. It would mean rather high gas prices when oil prices are high, a step which Russian authorities may be hesitant to take as low domestic gas prices are a de facto component of Russia's social contract. Ultimately this is a purely domestic – and purely political – decision for the Russian state to make. It seems apparent that the reform is being slightly delayed (the transition to netback pricing was supposed to be finished by 2011), and/or watered down, particularly for the residential sector. On the other hand, even a partial reform will incentivise Gazprom to invest more in domestic distribution and sales assets. Besides, connection of new communities and areas to the gas grid (gasification) is ongoing. So while higher domestic prices lead to lower consumption ceteris paribus, rising living standards, increased gasification and competition from other energy sources inside Russia will partly counteract the reform's intended effect. For a detailed treatment of these issues interested readers may consult, among many others, Spanjer

(2007) and Tsygankova (2008).

The main conclusion from this section is that the supply side presents a number of risks and uncertainties, but that there is no evidence to suggest that a sharp fall in Russia's export capacity will occur in the immediate future. In all likelihood Russia's total export capacity (including the Central Asian resources) will stagnate in the short-run and then rise somewhat in the medium-run thanks to new production from the Yamal peninsula. However if developments are particularly unfavourable with respect to Yamal then Russia will be unable to service all its commitments, and a serious shortfall could occur around 2015. In the shorter run, given current tightness, small supply shortfalls may occur at any time and may indeed be a hidden reason for the 2006 supply cuts as well for the 2009 supply cut. That argument has been made, among others, by Fredholm (2006) concerning the January 2006 supply disruption to Ukraine and to Central and Southeastern Europe. As a complement, one should mention the cut in supplies to Georgia (discussed in the next section), and the cut in supplies to Chechnya[2], both of which also occurred in January 2006.

Russia's geopolitical energy strategy

A convincing case can be made that Russia's energy policy is guided, in part, by an attempt to maximise the present value of future profit flows, in other words by a reasonably standard commercial strategy. However there is strong evidence that Russia uses its energy resources to promote broader geopolitical and foreign policy objectives as well. Unfortunately, the very real issue of potential supply shortages mentioned in the previous section has clouded Europe's energy security debate. The insistence of certain analysts, e.g. Riley (2006), to zoom in on the seemingly most important energy security issue and to label it as 'the core issue' has prevented a synthesis. In fact, the combination of scarcity of resources and high and rigid market penetration (i.e. through control of the cross-border transportation channels and other strategic assets) is the optimal way of obtaining pricing power (and ultimately political power) on consumer countries. In this section I make the case for viewing Russia's actions in the area of energy as partly motivated by foreign policy objectives. I start by discussing Russia's 'near abroad' and then move on to the European Union.

Russia seeks to control the political and foreign policy orientation of its near abroad, as

[2] See e.g. 'Chechens freeze as gas is cut off', BBC Online News, 27 January 2006.

expressed in more diplomatic terms in the fifth point of the 'Medvedev Doctrine'. As quoted in Friedman (2008), the fifth point states that "*(…) there are regions in which Russia has privileged interests. (…) our close neighbours.*" While the general wording of the fifth point speaks of 'friendly ties', any observation of recent events, notably the War in Georgia of August 2008, is sufficient to suggest that Russia wishes to re-assert its primacy with respect to other powers (particularly the United States, but also the European Union) in its near abroad. That implies resisting attempts by other powers to create strategic ties with those countries, while attempting to incorporate them into structures dominated by Russia, e.g. the CSTO. This objective (which predates the Medvedev Doctrine) is pursued using a number of policy instruments, including the corporate strategies of Gazprom and Rosneft. These companies are closely controlled by Russia's ruling elite, not only by virtue of state ownership, but also by the instalment of loyal members of Putin's original St. Petersburg circle into key positions, i.e. Dmitry Medvedev (previously) and Viktor Zubkov (currently) at Gazprom, and Igor Sechin at Rosneft. From those elements alone it is reasonable to suspect that energy supplies and investment flows may be used to support foreign policy objectives. The proof that this is the case lies in finding examples of Gazprom or Rosneft forgoing commercial profits in favour of foreign policy objectives.

Russia's deliberate supply disruptions to countries such as Georgia, Belarus, Lithuania and Ukraine over the 2006-2009 period, as well as the tough price negotiations conducted by Russia with the countries of the CIS over the same period, have both economic and foreign policy motives. This pattern is analysed in Christie (2007). Russia's declared intention to raise prices to CIS customers towards Western European levels over the period 2006-2009 led to substantially different outcomes between CIS countries. In particular, Russia leveraged the price negotiations with its neighbours in order to obtain controlling stakes in strategic energy infrastructure (e.g. in Belarus and Armenia), while taking a much harder line on countries that refused to sell off strategic energy assets (Lithuania, Ukraine, Georgia). The fact that the latter two countries also displayed a pro-Western orientation is no coincidence. Aiming for EU and NATO membership while committing strategic assets to the Russian state are incompatible sets of policies.

As a result, one can deduce that the general strategic goal of the Russian Federation for its near abroad is to lock its neighbours into an energy network controlled by the Russian state, thus enabling a kind of 'double dividend' made up of guaranteed future

profit flows and political leverage. The strategy also applies to those CIS countries that are net exporters of fossil fuels, particularly Kazakhstan and Turkmenistan. Here Russia's goal is to set itself up as a monopsony (single buyer) for the resources of those countries so as to prevent or reduce direct European (or other) access to them. Central Asian production plays an important role for Russia's ability to fulfil its export commitments to Europe given Russia's high domestic consumption. By locking Central Asian resources into a system in which Russia plays the role of a re-distribution platform to Europe, control over a large share of European resources is maintained, European efforts to diversify away from Russian resources are countered, ties with Central Asian countries are cemented, and broader Western strategic attempts to promote the non-alignment of those countries are reversed.

Russia's European energy policy also shows some remarkable patterns: partly natural results of the economic geography at hand, but partly also the result of deliberate strategic calculations on the part of the Russian Federation. Russia and Europe inherited the Soviet gas transportation infrastructure which penetrates deep into what is now EU territory, allowing Russia to supply most of Europe directly or indirectly. For practical purposes Russia's shares in the gas imports of EU states reveals a complete or almost complete market penetration in most of the formerly socialist New Member States, as well as high market shares in the countries of the 'Central EU axis', i.e. Germany, Austria and Italy[3]. Market shares further West are very low, in some cases zero. Given Russia's supply constraints it is not realistic to expect substantially higher market penetration in the EU as a whole. The question is whether Russia has a specific strategy to preserve or change those patterns, what such a strategy may be, and how Russia seeks to implement it. The key insight lies in the debate about diversification. Besides Russia, the European Union as a whole imports significant volumes of natural gas from Norway, from North Africa (Algeria, Libya and Egypt), from Nigeria and from Qatar, to name only the most important countries. Due to the structural factors mentioned earlier, EU demand for imported natural gas has been on the rise in the last few years, with expectations (until very recently) that the trend would be strong for many years to come. However what started to happen was that Russia (which, again, sits on the largest gas reserves in the world) started to seek partnerships with every other major gas producer that supplies (or may potentially supply) the European Union.

[3] I use the term 'axis' in a geopolitical sense to communicate my view that the balance of Europe-Russia relations revolves to a significant degree around those three countries. No historical meaning is intended.

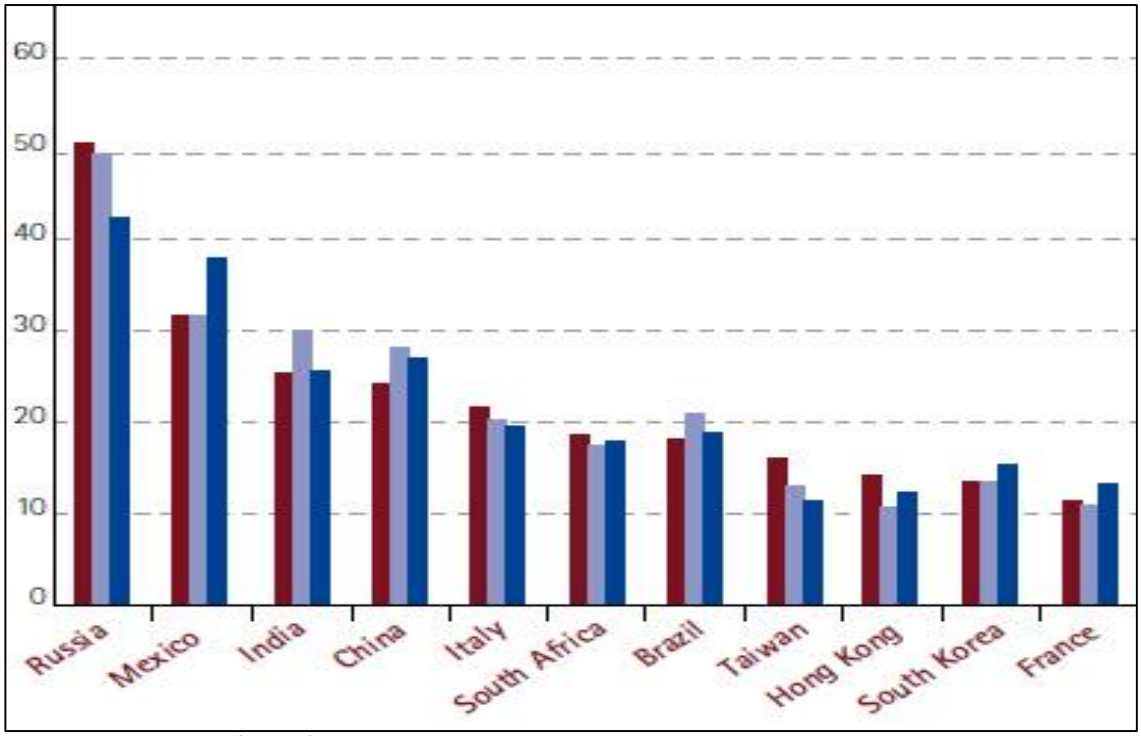
Russia has approached Algeria, Libya, Nigeria, Iran, Qatar, and, as mentioned earlier, the Central Asian states. While Western investors were hoping that conditions for upstream investment in Russia would improve so as to secure enough supplies, Russia seems to have played for time. It has imposed increasingly harsh restrictions on foreign and domestic private investment in its energy sector, most recently by introducing very stringent legislation on foreign investment in 'strategic industries', as reviewed notably in Liuhto (2008). In other terms, it is as if Russia were preventing the EU from diversifying its sources of gas where possible (buying up Central Asian gas at a high price, promoting South Stream as a direct competitor to Nabucco), and trying to extract profits from (and possibly obtain control over) the supply chains of gas from the remaining suppliers, where preventing diversification is not possible (attempts to create a cartel-like arrangement with Qatar and Iran; partnering with African suppliers).

The other side of Russia's European energy strategy concerns market penetration inside the European Union through new (planned) pipeline infrastructure (Nord Stream and South Stream), through downstream penetration in terms of distribution and storage assets, and through the use of a complex and intransparent network of 'gas trading' companies. Those aspects of Russia's strategy are probably the most deleterious in terms of their effects on member state governments and, most of all, on EU, IEA and NATO unity, not only in questions of energy policy and energy security, but also across the entire spectrum of Europe-Russia relations. On the European side, one observes a reduction in transparency with respect to official energy and trade data, an acquiescence to projects of questionable value from the viewpoint of European energy security, and, according to many critics though not with solid evidence (so far), bribery of government officials and politicians.

On the issue of data transparency, certain EU member states have instructed their national statistical offices to conceal part of the monetary value of natural gas imports by country of origin in international trade data. The worst offenders in this category are Germany and Austria who, together, account for the bulk of natural gas imports from the 'unallocated' category in Eurostat trade statistics. The bulk of member states release much more comprehensive data. Comprehensive economic data facilitates the work of academics, independent analysts, investigative journalists and others in civil society. Public access to such data would, most of all, make it easier to estimate actually paid import prices by source and destination country, information which would benefit European energy companies collectively (but not separately). This is a classical case for public intervention.

The phenomenon of bribery is particularly worrying. TI (2008) surveyed 2742 companies in 26 countries and asked them how often they believed firms from other countries (chosen from a list of 22 countries that partly overlapped with the list of surveyed countries) resorted to bribery of foreign government officials and politicians. Russia ranked highest in both categories by a substantial margin, with around 50 % of respondents (from the 26 countries) estimating that Russian companies frequently bribe both foreign officials and foreign high-ranking politicians. The results for the top 11 countries (out of 22) are shown in Figure 3. For each country in turn, the first of the three bars refers to bribery of foreign high-ranking politicians or political parties; the second refers to bribery of low-level public officials 'to speed things up'; the third refers to the use of 'personal and familiar relationships on public contracting'. Respondents were asked to rank firms from the 22 countries from 1 to 5 (1 = never; 5 = almost always). The percentages shown on the vertical axis correspond to the share of respondents who replied with a 4 or a 5.

Figure 3. Frequency of foreign bribery (%), by country of origin and by type



Source: TI (2008)

Since a substantial part of Russia's foreign business activities are in the energy sector it seems to be an open secret that such practices are frequent. However this is a serious matter. High-level bribery distorts policy-making. At the most fundamental level

it constitutes an affront to democracy. At the strategic level, such distortions may represent a national security risk. Individual politicians (or former politicians) in separate EU states may think nothing of taking a bribe, but these distortions add up and always go in one direction, and one direction only: to further the strategic interests of a foreign power.

Transit corridors and transit investment projects

The elements described earlier naturally lead to the issue of the transit of natural gas from Russia (and other producers) into the European Union, which is the core topic of this study.

Introduction: The classical energy transit problem in the case of overland pipelines is a three-country problem (or more if there is more than one transit country). The source country sells resources both to the transit country and to the destination country. As described in Christie (2007), the transit country benefits economically by charging transit fees, in addition to having a security lever by having the physical possibility of applying coercive measures on the resource flow, i.e. siphoning of resources and/or disrupting the flow. In the general case, the existence of a transit country represents additional costs as well as additional risks for both the supplying country and the country of final destination. One way around this problem is to invest in 'transit avoidance' transport infrastructure. If the net present value of the (future) energy transaction flows is higher for the source and destination countries in the case of transit avoidance (taking into consideration the capital costs of the new infrastructure), then it makes economic sense for the source and destination countries to build the transit avoidance infrastructure. If this is the case, there will however be consequences for the transit country as well. The transit country will continue to import from the source country by the former route, but will lose the ability to charge a transit fee as well as its former leverage on the transaction between source and destination countries. But the loss for the transit country goes further still if one assumes that the supplier resorts to deliberate supply cuts. This raises the question of Russia's reliability as an energy supplier and the prevalence and nature of deliberate supply disruptions.

Supply disruptions and Russian reliability: Russia has traditionally been seen as a reliable energy supplier. A number of Western European countries, notably West Germany, Austria and Italy, started to import Soviet gas well before the end of the Cold

War. Deliveries to Western Europe were stable in spite of the major upheavals that the USSR, and then Russia, endured during the 1980's and 1990's. The first years under Putin's rule seemed to confirm this positive record. As Western Europeans pondered their strategic choices, Russia seemed an obviously attractive partner. Energy supplies had been dependable for decades, and both the resource base and the transportation infrastructure seemed available and reliable (though in need of further investment). As Russia was more open and somewhat democratic and liberal (though decreasingly so from 2000 onwards) it seemed fitting for some countries (particularly Germany) to talk of a 'strategic partnership' between Europe and Russia.

In parallel, however, Russia's record as a reliable energy supplier was taking a turn for the worse with respect to the countries of the former Soviet Union. This process began in the 1990's and was essentially ignored in Western Europe because it tended to have little or no direct effect on deliveries to the West. Also, some of the disputes were interpreted as 'growing pains' as Russia's energy sector reformed itself and adapted to the recent political independence of former Soviet republics. While many disputes had commercial underpinnings (notably in terms of bringing prices in line with those charged in other foreign countries), others had political overtones as well. As carefully analysed in Larsson and Hedenskog (2007) and reiterated in Christie (2007), many disputes seemed to combine both tendencies, while the economic or commercial rationale has been more prevalent than the political one. That said, the very existence of even a small number of incidents that are purely political in nature reveals that the Russian Federation uses energy supplies as a tactical tool of political leverage in order to effect disapproval, intimidation or retribution. Two particularly blatant cases may be mentioned as examples. The first example is the sabotage of electricity and gas connections to Georgia[4] that occurred on Russian territory in January 2006 (an action that was attributed to 'insurgents' by Russian authorities – an explanation few outside Russia believed); and the two successive falls in oil supplies to the Czech Republic in July 2008, for which no intelligible explanation was offered, and which closely followed a Czech commitment to host a radar for the US Missile Defence system[5].

The case of the Mazeikiai refinery in Lithuania holds important lessons as well. As the only refinery in the Baltic States it is naturally an important strategic asset. After a brief

[4] See e.g. "Russia blamed for 'gas sabotage'", BBC Online News, 22 January 2006.
[5] See e.g. "Russia further cuts its oil deliveries to Czech Republic", by Judy Dempsey, International Herald Tribune, 30 July 2008.

spell under the control of Williams Companies Inc., a US energy group, the Lithuanian authorities allowed former privately-owned Russian oil giant Yukos to acquire it. Lithuania could therefore not be accused of anti-Russian sentiments. However as Yukos was being broken up by the Russian state (ostensibly due to tax violations, though most observers believe that the charges were politically motivated), the refinery was again up for grabs. Lithuania chose a Polish company, PKN Orlen, for the ownership of the facility. The deal was announced in May 2006. In July 2006 the oil supply from Russia, from the Northern branch of the Druzhba pipeline, was cut off for 'technical reasons', an explanation few believed. It is worth quoting Energy Commissioner Piebalgs (as cited in New Europe, 2007) at some length: "*The Russians are already working towards re-establishing supply, but, at the same time, the damage is already done now to both sides. The Russian side believes there was too much politicisation of the issue - that it's a technical issue. From our side, we believe that it was cut off not exactly for a technical issue. So, both sides mistrust each other; and I believe that in energy relations we should avoid mistrust and it should be clear predictability and clear answers whenever a situation emerges […]*"

The statement above was made in April 2007. Two years have passed, and supplies have not resumed. The mistrust is however still there, and has increased due to other disturbing developments that have occurred since. The most significant event is of course the gas conflict of January 2009 between Russia and Ukraine. While the Ukrainian side clearly made a number of serious mistakes, Russia resorted to an extraordinarily heavy-handed measure by shutting down all gas transfers through Ukraine – the bulk of its export flow to Europe. The shut-down lasted two weeks. It was the middle of winter. Preliminary estimates suggest that Bulgaria suffered an economic loss of around €250 million[6] as a direct result of the cut. Clearly, a barrier has been breached. This crisis was deeper, more prolonged and more damaging for Europe than any of Russia's supply disruptions so far. As a result, Russia's reputation as a reliable supplier is now severely damaged. The International Energy Agency stated on its web-site on 16 January 2009 that: "*(…) The way both parties have acted over the last weeks and notably this week is unacceptable. This casts a shadow over the reputation of Russia as a reliable supplying country for Europe. It leaves consuming countries no other option than to speed up moves to find alternative suppliers, fuels and transit routes in the future. (…)* "

[6] See e.g. "Bulgarian president to talk gas compensation during Russia visit", RIA Novosti, 2 February 2009.

Energy transport infrastructure projects revisited: Three major gas transport infrastructure projects are currently under discussion for the provision of additional capacity into the European Union from regions situated to its East. The three projects are: Nord Stream, a project controlled by the Russian Federation to lay down an offshore pipeline connecting North-West Russia to Germany; South Stream, another project controlled by the Russian Federation, also offshore, to connect the Russian Black Sea coast directly to Bulgaria, and then onwards to Central Europe and Italy; and finally Nabucco, a project led by Austrian energy major OMV, that aims to bring resources from Central Asia and/or Iran and/or Arab Middle Eastern countries, through Turkey and into Central Europe. All of these projects suffer from a number of problems. I focus the discussion on Nord Stream and South Stream. On Nabucco I would only say the following. The project seems to be drifting towards considering Iran as its main source of supplies. That view conveniently neglects what kind of political regime is in place in Iran, as well as the nature and depth of relations between Iran and Russia. It therefore seems like a myopic leap into the unknown, rather than a well-considered search for reliable energy supplies.

In general terms, it is possible to outline a number of analytical insights that enable an over-arching analysis of Nord Stream, South Stream and other possible pipeline projects between Russia and the EU. At the simplest level, in the absence of non-commercial behaviour (i.e. no strictly political or geopolitical considerations), and in the absence of investment commitment problems, the issue of energy transport infrastructure would depend only on choosing the volume of transport capacity that is such as to match supply with demand. If transport capacity were costless this would be elementary. Moreover, the number and location of pipelines would have no impact. Installing transport capacity is however relatively expensive. The pipeline projects mentioned have capital expenditure costs of several billion Euros each. On the other hand, once a typical pipeline is built, it has a long life-time and low operating costs. Its relatively high capacity and the relatively high price of gas (compared to operating and other costs) mean that the net present value (NPV) of the project as a whole becomes positive after just a few years. After that the pipeline becomes a rent-generating device.

There are of course limits to the number of lines that may be built before the marginal return from an additional line becomes negative in NPV for, say, a 25 year horizon. It is nevertheless possible for a supplier to over-invest quite substantially in transport capacity before making an overall net long-term loss. Naturally, if the goal of the

supplier is to maximise lifetime profits, investing in unnecessary transport capacity is still wasteful, but it is not unsustainable. As a result, a supplier can decide to forgo a share of life-time profits by building up excess transport capacity. And in effect this is exactly what Russia is doing in promoting both Nord Stream and South Stream. Given current forecasts for both demand and supply, and assuming that both projects were carried out, Russia would have at its disposal a range of lines with which to export into the EU. Given excess capacity Russia would be able to shift supplies between lines, and would have the possibility of strongly reducing supplies to certain countries while leaving supplies to most other countries unaffected. That broad range of control, while expensive, would still be profit-making (but for a slightly longer time horizon). The key question, of course, is whether one should put so many levers into Gazprom's hands. Given Russia's recent behaviour this seems particularly unwise, as sudden supply disruptions should be expected to occur. On the strict issue of security of supply there is really nothing that can be said in favour of Nord Stream as compared to alternative onshore lines. It does not correct an existing unfavourable security situation, as Poland poses no liability to either Germany or Russia. It raises the vulnerability of the bypassed countries, and it would make Russian supply disruptions less costly for Russia, and therefore more likely to occur.

Another important insight can be drawn from game-theoretic literature on strategic investments. One interesting example is Hubert and Suleymanova (2008). The authors model new pipeline investment commitment problems between Russia, Belarus, Ukraine and Poland, with a view to supplying the latter three countries and others further downstream. The authors, as well as perhaps others at the German Institute for Economic Research (DIW), seem very keen to promote the Nord Stream project and brush aside any energy security concerns, as evidenced by the interview of one of the authors in DIW (2009). However the actual study reveals that a decision to invest in Nord Stream can only result from a non-cooperative and sub-optimal equilibrium. In particular, only two set-ups in Hubert and Suleymanova (2008) allow for Nord Stream to arise: either if Russia goes it alone without agreement from any of the potential transit countries; or if only Poland is ready to commit to work with Russia (e.g. increased capacity on Yamal-Europe), but Russia decides to refuse to share rents with Poland. The more general insight is that the solutions with Nord Stream are all cases that lead to over-investment and excess capacity, while much more efficient (and less costly) solutions involving onshore investments in Belarus and/or in Ukraine are available. As these findings suggest, the dynamic cannot be modified by Poland alone.

Implicitly, Belarus could commit with Poland to an onshore project with Russia, but this (apparently) has not occurred. As with many other types of commitment problems, a large external actor can be the solution. This, it seems, is what the Commission is hoping to achieve by engaging with Ukraine at present. According to Kupchinsky (2009), the agreement of 23 March 2009 foresees that European investment would be brought into Ukraine for upgrades (and expansion) to Ukraine's transit capacity. Also, EU gas companies would henceforth buy gas directly from Russia at the Russia-Ukraine border and pay the transit fees directly to the Ukrainian authorities. In other terms, Ukraine would be fully integrated into the European gas market, as well as seeing its transit capacity upgraded. It seems that the European Union and Ukraine have made a strategically very wise decision. This is in line with the optimal scenarios described in Hubert and Suleymanova (2008).

By implication, both Nord Stream and South Stream would then become totally unnecessary and should therefore be cancelled. Nabucco seems difficult to achieve at least in its original version with gas from Central Asia. A variant with supplies from Iran seems unattractive for geopolitical reasons and should not be pursued. Concerning Europe's investment in Ukraine's infrastructure, the key is what Russia will do. Given that Gazprom will want to maintain its sales to the European market rather than lose them, it is very unlikely that Russia will react in a strategic manner. It is however certain that it will react in a tactical manner and will seek to undermine support for the project both inside Ukraine and within the European Union, using the many levers it has at its disposal. However the project should continue regardless. Contrary to what some observers have said, it is neither desirable nor necessary to have an energy dialogue with the Russian Federation, as its moves are always more informative than its words. The European Union may finally be learning how to play chess. There is no talking during a chess game.

Conclusions

The EU Commission and the Member States must now react and restructure the parameters of the energy relationship between the European Union and the Russian Federation. In particular, and in order to safeguard a balanced and mutually beneficial relationship, the European Union should, as recently announced, integrate Ukraine fully into the EU's energy market and invest in the country's energy infrastructure. Some expansion in Ukrainian capacity is foreseen. However Europe's best interest is to limit

gas transport capacity to what is actually needed, bearing in mind short-run trends, the 20-20-20 targets, and longer-term (and more stringent) emissions targets after 2020. If the 20-20-20 targets are met, and if the collaboration with Ukraine is successful, additional transport infrastructure projects such as Nord Stream and South Stream will prove to be totally unnecessary. In fact, they would reduce the energy security of the European Union and should therefore both be cancelled.

More broadly, serious efforts are needed to shift Europe's energy mix in favour of renewables, nuclear power and CCS-equipped coal-fired plants, in addition to substantial efforts on energy efficiency. If these steps are taken seriously then there is no reason why Europe's overall position should not progressively become much more favourable. However the Commission should study the option of introducing additional measures or targets to make sure that natural gas import demand growth is more-or-less in line with the scenarios presented.

In parallel it is equally crucial that the vision developed by the Commission in the framework of the EU Energy Security and Solidarity Action Plan receives serious financing. As demonstrated by recent events, Russian supply cuts are an empirical regularity, and may even become more frequent and more severe in the next few years. It is therefore urgent that the particularly vulnerable New Member States carry out investments in interconnection, storage and LNG terminals for the amount of natural gas that they will continue to consume. This calls for solidarity from all Member States, as this is an issue of collective security. Germany, Italy and other countries that have had 'good relations' with the Russian Federation need to be reminded of their primary duties, their treaty commitments to their partners and allies: collective security through NATO, collective prosperity and freedom through the EU, collective energy solidarity and transparency through the IEA. Those institutions are the architecture of the Euro-Atlantic community. They carry the values that Europeans believe in, and they work when member states focus on the spirit of the commitments, rather than on the letter of the law.

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Europe's triple by-pass - The prognosis for Nord Stream, South Stream and Nabucco

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Contents

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Introduction: Now is the winter of our discontent … (again)

Yet another row over gas transit to Europe accompanied by haggard recriminations, finger-pointing and tired calls for the review of the EU-Russia relationship. However, unlike the past bouts between Russia and Ukraine concerning pricing, transit fees and stolen gas, this latest instalment of the energy game has lost its apparent "greatness". This time around, a large group of consumers in South-Eastern Europe were directly affected by the shut-off. Consequently, the EU finally saw fit to act outside the bounds of political rhetoric and investigate the physical causes of the loss of supply by sending observers to Ukraine.

Whether or not the observers played any constructive role in the lifting of the transit ban through Ukraine's system by Russia is not the point. The events of January 2009 have yet again demonstrated the fractured nature of relations among states that each on their own plays a vital role in the maintenance of the European energy sector. More importantly, the January crisis has reinforced the concept that energy security goes beyond existing conceptions of access to upstream supply balanced by consumer demand. It should be obvious to the most callous of observers that all sides currently lack the vision to fully comprehend and the mechanisms to deal with the unintended consequences structural changes have wrought on European energy trade over the past 30 years.

… made glorious summer?

For many, the most readily attainable solution in part to Europe's energy dependence is diversification of upstream supplies and suppliers of natural gas. In order to fulfil this strategy, the expansion of existing pipeline infrastructure to link up to new fields in various producer states is the instrument with which the Gordian knot of European energy security may finally be cut.

These new mega-projects, Russia's Nord and South Stream along with the Austrian-led Nabucco pipeline each in their own way have seemingly been planned to overcome either Gazprom's (admitted) or the EU's (growing) apathy towards the transit states of the Western CIS. Incentives for the construction alternative pipelines are apparent: new sources of natural gas (Nord Stream: Shtokman, Yamal & Yuzhno-Russkoye / South Stream: Yamal, Azeri & Turkmen fields / Nabucco: Iran, Central Asia & the Caucasus), piped through lines that avoid significant transit states (or replacing unreliable for more

reliable transit partners), and ultimately reaching economically significant or developing consumer markets (Germany & the Western EU / Turkey and South-Eastern Europe).

However, the push for more infrastructure may do more harm than good in terms of European energy security. Not only does the “more is better” strategy risk increasing competition for limited resources in the upstream, but it may serve to increase the gap among the energy rich and poor in the EU, forcing potential have-nots (Belarus, Ukraine, Poland, the Baltic States) to search for their own solutions to their energy needs through a return to coal, investing in expensive LNG or revisiting the nuclear option. Ultimately, the continuing pursuit of such zero sum solutions to a common European problem under prevailing conditions would only serve to enhance the growing cacophony that is today’s European energy sector.

This contribution to the volume strives not to decry the construction of the pipelines outright or to generate blame for the structural factors that have led the European energy sector to these worrisome circumstances. It is instead an attempt to understand the historical context from which these projects developed, objectively assess the costs and benefits derived from each pipeline, analyse the implications of the transit diversification strategy and proffer tangible approaches to deal with the challenges that exist beyond the diversification discourse.

Setting the historical context: Hubris, great intentions, and the road to energy insecurity

It has been reported with surety that Russia vs. Ukraine Part II was precipitated by steep declines in world hydrocarbon prices brought on by Wall Street’s financial meltdown. However, besides the usual suspects of global economic malaise, the political and economic dimensions of the resource curse, and the Putin bogyman, substantial structural shifts that occurred back in the early 1990’s are the predominant precursors to contemporary policy dissonance.

Europe’s initial wake-up call to these structural changes came in early 2006. The first major gas row between Russia and Ukraine was not solely profit-driven. With control over the remnants of the defunct Soviet energy system in flux, a struggle ensued over who pays and who profits from Russian / Turkmen gas flowing through Ukrainian pipelines to European consumers. It is evident that the institutional collapse of the

USSR not only created new states, but fractured a unified system of interests based on and infrastructure for the exploration, extraction, processing, transit and distribution of hydrocarbons upon which Europe's consumers were tacitly reliant.

Apart from the institutional adaptations that took place upstream, the EU had its own understanding of the transforming policy environment downstream. Decoupling various components of the distribution and retail sector was seen as politically and economically sound, in that competitive markets made happy European consumers. As long as world prices for oil, natural gas and electricity remained low, the ability to set the energy agenda rested with European consumer states. Consequentially the EU could afford to rely on the market to regulate the energy trade.

However, Europe's liberalisation of its internal energy markets continued under conditions of increasing commodity prices worldwide. Unwittingly the EU liberalisation policy ceded more financial and agenda-setting control upstream to producers such as Russia and Turkmenistan. As early as the late 1980's, Gazprom had begun to seek out partners for its gas export business in the European downstream. The creation of joint venture marketing companies afforded the Russian company better information regarding the pricing of its natural gas in European markets, as well as forcing a fundamental change in how much access Gazprom would have in European gas markets (Stern 2005).

Gazprom's new found entry into Western European markets has not been duplicated to such an extent in the case of Central or Eastern Europe. Former states of COMECON have been seeking for any way to diversify their supplies of gas away from Russia. These attempts by states such as Poland, the Czech Republic and Romania have met with varying levels of success (Stern 2008). However, what unified these strategies was a drive by these states to insulate themselves against the structural changes occurring within the energy sector:

"*For most countries, the objective is less that of achieving 'independence', and more about restructuring commercial relationships in order to achieve a more politically acceptable framework of economic and energy interdependence.*" (Stern 2008:117)

In addition, if the diversification strategies share another commonality, it is that they are illustrative of the fact that Europe lacks the institutional mechanisms to deal with the

inherited heterogeneous economic, political and social structural conditions observable in new member states.

Simultaneously, the transit states Ukraine, and to a lesser extent Belarus, Georgia and Moldova became wildcards. For these former members of the Soviet Union, gas was a good that did not possess a monetary value. Instead the commodity was interpreted predominantly as a social good; one that had a specific socio-economic role to play: that of generating heat and power for the country's factories and homes. Lacking an accurate price tag, gas was interchangeable with commodities such as wheat, bricks or rubber boots.

By the late 1990's problems began to emerge when asset swaps and non-payments among CIS member states did not serve to maximise the value of Gazprom's key resource. Attempts by the company to monetarise the previously barter dominated sector of the value chain have exposed transit countries to economic and pressures with which they possess limited experience in coping. Having so far proven difficult to resolve, questions of fair value and price, debt, assets swaps and direct control over existing transit infrastructure now haunt the whole of the European energy discourse.

Obviously, there is more behind the planning and construction of these mega transit projects that will physically connect European natural gas consumers to potential suppliers far upstream in the Russian north, Western Siberia, the Caspian Basin and Central Asia than just geopolitical machinations. What follows is an attempt to illustrate the interplay of latent financial, institutional, informational and physical influences through a comparative analysis of three pipeline mega projects scheduled to be commissioned from 2011 to 2020.

The future of European energy supplies?

In dealing with the prevailing economic, institutional, information and physical structures that define the European energy sector, both European and Russian energy majors have developed massive infrastructure projects, which if successful, will bring more gas to the European market. However, while providing the promise of access to more diversified and younger greenfields upstream, these projects present formidable challenges to the balance of Europe's energy policy that have gone under-reported in

the press, cast aside by politicians and largely ignored by much of the academic community.

Nord Stream[8]

Originally christened as the North European Pipeline, Nord Stream was to be constructed by a joint venture between Gazprom and the Finnish firm Fortum. Feasibility studies for the undersea route in the Baltic Sea were carried out in 1997, resulting in the project gaining 'common interest' status within the EU-Russia Energy Dialogue in October of 2001. By 2005, the profile of companies scheduled to participate in the construction of the pipeline had changed radically with Gazprom buying out Fortum's stock package in the original joint venture North Transgas.

Shifts in the corporate profile of the project were also accompanied by changes in the sources of the gas for the line upstream. Originally tied into the development of the Shtokmanovskoye (Shtokman) field in the Barents Sea, upstream sourcing for the pipeline has changed to the Yuzhno-Russkoye field in Western Siberia with the inclusion of BASF/Wintershall and E.ON/Ruhrgas in the ownership of the new joint venture, Nord Stream. There is also speculation that the fields of either the Yamal Peninsula or the Ob-Taz Bay may be connected to Nord Stream.[9]

[8] http://www.gazprom.com/eng/articles/article22901.shtml

[9] As recent as 2007, there have been changes again to the source of natural gas destined to fill Nord Stream with Gazprom announcing that once again, Shtokman ultimately will be the field from which the pipeline's gas will flow to Denmark, Germany, the Netherlands, and eventually through a further extension, the UK.
http://www.gazprom.com/eng/articles/article18466.shtml

Table 1. Pipeline technical specifications

Pipeline	Active Partners	Technical Specifications	Supplies	Potential Markets	Operating Environment
Nord Stream (Oct. 2001)	Gazprom 51% (Rus.); E.ON/Ruhrgas 20% (Ger.); BASF/Wintershall 20% (Ger.); Gasunie 9% (Ned.).	Portovaya Bay (Rus)-Greifswald (Ger.); Length: 1220 km / Capacity: 55 bcm p/y (2 pipelines with 27.5 bcm each); Online: 2011 Cost: € 7.4 bn.	Yuzhno-Russkoye (825.2 bcm of gas ABC1 category, 208.9 bcm of gas C2 category), Yamal Peninsula 16 tcm gas reserves (ABC1+C2) & 22 tcm of reserves (C3+D3), Ob-Taz bay (800 bcm – 7.5 tcm) & Shtokman field (3.7 tcm).	Germany; UK; NED; & Denmark	Baltic Sea rim; political outcry from Baltic states & Poland; questions of supply, profitability, & safety.
Nabucco (2011)	Botas As (Tur.); BEH EAD (Bul.); MOL Plc. (Hun.); OMV Gas & Power GmbH (Aus.); RWE AG (Ger.); & Transgaz S.A (Rom.). (Each shareholder holds 16.67%)	Georgian/Turkish and/or Iranian/Turkish border to Baumgarten (Aus). Length: 3300 km Capacity: 31 bcm p/y. Online: 2014 (p.I) / 2015 (p.II) Cost: € 7.9 bn.	Azerbaijan (BTC), Turkmenistan &, Kazakhstan (Trans-Caspian), Egypt (Arab PL), Russia (Blue Stream) & Iran.	Central (Hun., Czech Republic, Austria), Western Europe, Romania, Bulgaria, & Slovenia	Alternative, on-land route from M.E. to C. Europe; most connectors do not exist; no guaranteed supplies.
South Stream (June 2007)	MoU Gazprom (Rus.) & Eni (It.)	Beregovaya (Rus.)-Varna (Bul.); Capacity: 30 bcm; Online: 2013; Cost: ?	Shah Deniz Phase II (Azeri)? Turkmen / Kazakh gas through CLP? Potential Russian sources?	Northern Option: Serbia to Hun. (storage); (a) Austria & (b) Slovenia, Italy. Southern Option: Greece.	Undersea route by-passing Ukraine & Turkey; supplies unclear; costs un-determined.

South Stream[10]

Unlike its northern counterpart, the official groundwork for South Stream has only been recently laid between Gazprom and the Italian firm Eni. Details such as the source for the pipeline's supplies, costs and the project's commissioning are still unconfirmed. However, the pipeline's path has been more or less established. Sources quote that at maximum capacity, South Stream will provide 30 bcm to consumers along two major

[10] http://www.gazprom.com/eng/articles/article27150.shtml

routes. The first axis will run through the Balkans north to Hungary, where storage facilities will be built. Eventually South Stream will reach its main terminus in Austria and possibly be extended to Northern Italy. The second, southern axis will provide natural gas to markets in Greece.

Nabucco[11]

Proffered as a viable alternative to Russia's proposed South Stream pipeline, the Nabucco project, headed by the Austrian OMV Group, plans to run natural gas along an on-land route beginning at Turkey's eastern border, crossing the Bosporus Straits, running through the Eastern Balkans, Bulgaria, Romania, then into Hungary and eventually reaching its terminus in Austria. The estimated cost of the project is € 7.9 billion with expected commissioning to take place sometime in 2014. The line will carry 31 bcm, but like South Stream, the upstream sources of the gas are in question.

Pipedreams: **et-tu Nord Stream?**

Several intervening factors are persistently underemphasised when it comes to assessing particular strategies or policy decisions within the energy sector. Under ever-changing financial, institutional, physical and informational conditions, all three projects face very basic challenges to their viability:

- Firstly, from which fields will the supplies of natural gas originate to fill the new transit routes?
- Secondly, assuming that all three projects are implemented, what will the profitability of the projects be in the face of increasing gas on gas competition?
- Thirdly, does possessing more pipelines substantively increase Europe's energy security or just defer the harder questions such as further investments centring on existing infrastructure, regulatory frameworks or energy mix to a later date?

[11] http://www.nabucco-pipeline.com/

Table 2. Pipelines within the structural context and perceivable knock-on effects

Pipeline Commissioning	Physical Factors	Financial Factors	Informational Factors	Institutional Factors	Knock-on Effects
Nord Stream (2011)	Direct supplies from reliable supplier; choice and distance of supplies from pipeline hub; environ. risks; technically challenging project.	Cost overruns; well head prices dependent upon location of upstream source.	Questions abound concerning price, profitability, safety and technical soundness of the project.	Institution free; no universally accepted regulatory framework to cover transit.	Exposes mismatch of EU Russia energy strategies; separates EU market into 2 halves; bypassed countries securitise the pipeline project. Increased gas on gas competition in EU market.
Nabucco (2014/2015)	On-land pipeline; proposed wide upstream resource base (none confirmed); connectors to upstream not completed; conceivably could reach a huge set of consumers from the Middle East to Central Europe.	Projected initial investment is reasonable for a diverse set of stockholders; questions on delivery price connected to upstream well-head costs.	Questions of availability and variation of upstream resources & overall profitability.	Institution free environment; access to reserves & market; no universally accepted regulatory framework to cover transit.	High level of competition for access to new reserves; underdetermined nature of the key element of the project namely upstream supplies and costs call into question the viability of the project; Increased gas on gas competition in EU market.
South Stream (2014)	Direct supplies from reliable, single source; Offshore pipeline avoiding transit states; conceivably could reach a huge potential market in Europe.	Costs could be astronomical depending on feasibility of the proposed route; price is undetermined due to lack of upstream field information.	Feasibility studies have yet to be released; no information on upstream resource base, the costs, or environmental impact available.	Institution free environment; access to reserves & market; no universally accepted regulatory framework to cover transit.	Avoidance of transit states could lead to securitisation of the pipeline issue; lack of key information concerning supplies, market and well head price makes analysis of the project's economic viability difficult to ascertain; Increased gas on gas competition in EU market.

Besides the lack of full information regarding the economic, institutional and physical environment, an actors' ability to assess the effects of time on their ability to maximise interests comes to mind in the case of any strategic decision. The pipelines discussed below are no exceptions.

The problems with Nord Stream & South Stream

For all the preliminary bad press Nord Stream received in the media centering on reliability of supplies, overall profitability, technical viability, and associated environmental risks, the implication of the pipeline's construction in the context of continuing gas rows is foreboding.

For those transit states that currently rely on the hydrocarbons for power generation and transit fees for important budgetary flows, incentives to maximise rent from transit by defecting from delivery to Europe may become stronger. On the successful commissioning of Nord Stream[12], the ability of transit states in the Western CIS to extract preferential pricing of hydrocarbons from Russia for domestic consumption in exchange for facilitating transit of supplies to Europe will effectively come to an end by 2015 (Mitrova et al. 2008). Conceivably, volumes that previously were pumped through existing lines in Belarus (Yamal) and Ukraine (Brotherhood) could dry up. This loss of transit revenue potentially could leave Ukraine and Belarus with significant budgetary shortages; the results of which could be damaging for not only the maintenance country's energy sector infrastructure, but for the well-being of society as well as the stability and legitimacy of both states.

For consumer states avoided by the new line, it may be their sole option to seek out partners for alternative infrastructure to diversify their oil, gas, and electricity supplies away from limited, existing options in the short term. The possibility of a steep escalation in an "energy infrastructure race" among downstream consumer states presents a would-be nightmare for regulators, politicians and businessmen alike (Dusseault 2009).

In the rush to gain short term solutions to access, consumers are beginning to seek out any way to link directly to new supplies; and in turn disregard the existing interdependence with other consumer, transit, and producer states. By pursuing

expedient unilateral strategies, fundamental questions such as resource finiteness, geographical proximity, prohibitive sunk costs, sufficient numbers of consumers, profitability, regulation, and environmental impact are increasingly ignored. There is a palpable risk that the disparity among the energy poor and energy rich in Europe will grow without a significant commitment to a longer term vision and concerted approach to the energy issue at hand.

This may be excellent news for the industries associated with underwater pipeline, or even nuclear power station or LNG terminal construction. However, at this juncture in time, regulatory and inter-state coordination issues have yet to be addressed extensively by EU member states outside the market liberalisation matrix.

The eventual commissioning of South Stream would only serve to reinforce the last point concerning the possible marginalisation of the transit states through the devaluation of their transit assets due to loss of market and subsequent underinvestment. Despite its ability to limit Russia's transit risk, significant questions remain in terms of the supplies which will fill the line. Unlike Nord Stream where the potential fields are geographically proximate (Shtokman) or accessible through existing pipeline infrastructure (Yamal / Yuzhno-Russkoye), South Stream's upstream sector is yet to be determined. Until the upstream issue is settled, then doubts concerning profitability reliability and overall suitability of the project will remain unanswered and subject to continued speculation.

The difficulties associated with Nabucco

In the case of Nabucco and its associated link to Turkmen fields, the Trans-Caspian Gas Pipeline (TCGP), time is a huge factor:

"*The main problem for fourth corridor pipelines to Europe is the lack of large scale gas supplies to the late 2010s.*" (Mitrova et al. 2008: 404)

So, without any other tangible upstream sources at this time, Nabucco mainly relies on the promise of Turkmen supplies of natural gas to fill the line. However, Turkmenistan has been non-committal regarding Nabucco beyond loosely promising to supply 10 bcm for the line. If the partial commitment to the project was not enough, the line's

[12] It is predicted that commissioning will occur sometime around 2011.

proponents are also handicapped by the Turkmen regime's reluctance to close a deal with European companies.

"*Turkmenistan's consistent approach in dealing with potential purchasers – which is to avoid taking transit, marketing and other risks and simply to negotiate the highest possible price at its own border – does not improve the prospects for export to Europe.*" (Pirani 2008: 299)

In addition to Turkmenistan's strategy in dealing with Europe, there are the physical and economic issues of proximity to market and price. Turkmen gas is already competed for intensely by both the Russians (export to Ukraine) and Chinese (domestic consumption). Geographic proximity plays a role in Turkmen gas in the eastern fields of the country being shipped through pipeline to Western China. However, it is the netback pricing of Russia which acts as a powerful financial incentive for the Turkmen government to play ball with Russia instead of Europe. Quotes anywhere between 250-300 mcm from Gazprom heavily outweigh the 175 mcm being offered by western companies.

Without additional Turkmen gas, Nabucco will have to look elsewhere in the upstream for available supplies to fill the line. The majority of these options either rely upon the construction of connector lines to fields which access is already available (Kazakh and Turkmen (10 bcm) supplies through the TCGP), projects in which assets may be available (Azeri fields 11-14 bcm), but have been preliminarily divided among a number of consumers (Iran, Azeri domestic market & Turkey) or on LNG which would itself entail a great of amount of sunk costs, extended lead-times and additional logistical efforts to coordinate shipping the gas to the EU.

It does not seem likely under the current conditions that Nabucco will come close to South Stream's projected commissioning in 2013[13]. It is a more likely scenario that the some part of the Nabucco project will be in service by 2015. Following 2015, the larger Nabucco and TCGP plan may become a reality with developments in the resource

[13] That having been said, there are no guarantees that South Stream will be on-line by 2013 either. Although unlike Nabucco, upstream resources will be coordinated by one actor, presumably Gazprom. Another significant advantage is the pipeline's offshore route which again avoids major transit states, this time Turkey and Ukraine. Finally, South Stream's consortium has already signed supply agreements with distribution partners in all the downstream states. All these factors contribute to save time on the coordination costs that seem to pose a greater threat to the success of Nabucco.

base. However, estimated 10 year lead times for developing the upstream fields along with determining which companies will control the resources seem to be major hurdles in getting the gas to the EU market as proposed by Nabucco's partnering companies.

Analysis: Changing dynamics along an increasingly complicated value chain

It is clear, as with any major engineering project, these pipelines face daunting technical hurdles. Placed within the shifting structural context of the European energy sector, one can start to appreciate the difficulty with which optimal, long-term energy strategies for states along the economic value chain may be forged.

Table 3. Challenges and adopted strategies along the economic value chain

	Upstream	Transit	Downstream
Existing challenges	Efficiency of field development; murky investment and regulatory environment (Rus. Turk.); changes in the proximity of the resource base (Rus.); lack of sufficient infrastructure; consumer demand.	Monopoly transit Russian side; lack of capacity & investment (W. CIS); debt (Ukr.) & non-payment (Ukr. Bel.); consumer demand.	Developing monopsony (Gazprom); increased likelihood of gas on gas competition; underdetermined regulatory environment; consumer demand.
Adopted strategies	Vertically organised energy sector (producer states); push for reciprocity ownership (EU).	Renegotiation of pricing (Rus. & Ukr.); asset swaps (Rus. & Bel.); new pipelines (Rus. & EU).	Expansion of export markets (Rus); liberalisation of energy markets (EU); diversification of supply (EU).

Upstream: The resource base, domestic demand and institutional environment: Russia's energy strategy to 2020[14] had clearly defined two major vectors along which the country's domestic and external energy strategies would develop. Concerning the domestic sector, a policy of vertical integration of the oil sector as well as continued centralised control over revenues and decision-making in the gas sector would form the basis for the country's continued socio-economic development. Externally, the government as well as the country's energy majors have pursued a policy of

[14] http://ec.europa.eu/energy/russia/events/doc/2003_strategy_2020_en.pdf

monetarisation of CIS energy trade along with market expansion to maximise the lucrative oil and gas revenues in strategic markets such as Western Europe.

In the latest version of the Russian Energy Strategy[15], policy makers and sector experts are turning inwards to address serious physical, institutional and market based challenges faced by the domestic section of the industry. Rather than focusing on continued consolidation as was the focus previously, the new strategy outlines a programme of investment directed at developing the value added section of the production chain as well as tackling energy intensity. This strategic alteration will require a more flexible approach to an increasingly complicated and shifting resource base, the establishment of corresponding institutional structures to underwrite efficient cost-benefit distribution, and finance for technical innovation needed to make the necessary efficiency upgrades throughout the sector.

A changing resource base & challenges to development: One of the major misconceptions on the part of outside observers regarding the upstream sector is that fields are more or less homogenous reservoirs of oil or gas which only need to be tapped and connected to infrastructure to get the goods to market. Perhaps Russia's major oil and gas fields in the Urals and Western Siberia have contributed to this myth. Nevertheless, with the slow maturation of these super giant fields, the structure proximity and associated costs of developing the resource base, especially in the gas sector is changing.

Just taking into account the fields that have been proposed as sources for Nord Stream, only Yuzhno-Russkoye is located inland, albeit in an area covered by permafrost. The Shtokman field is under the Barents Sea, far from coastal storage and transit infrastructure. Yamal's fields consisting of both on land and offshore reservoirs can be divided into three groups along the spine of the peninsula; Northern, Central and Southern. Each group presents a specific engineering challenge due to location (with some fields submerged for 6 months out of the year), the climactic conditions (Russian Far North) size and grouping of the field(s), along with proximity to existing infrastructure, if at all (Stern 2005; Remes 2008).

[15] http://www.iea.org/textbase/work/2008/neet_russia/Gromov.pdf & http://www.energystrategy.ru/materials/koncepc.htm

The point here is that although Russia may possess the largest gas reserves in the world, just the physical conditions under which these projects will be exploited present significant obstacles in terms of technical feasibility, extraction amounts, value-maximisation of the gas, environmental protection, and inevitably, bottom line cost for the end-consumer.

Consumer demand for natural gas: Russia is not only a producer of, but before the financial crisis, possessed a burgeoning domestic market for its own natural gas. It has been reported that 60 % of natural gas produced in Russia is consumed on the domestic market, predominantly by industry.[16] With the creation of the country's gasification programme[17], additional domestic demand side pressure has be added to an already tight external market for the country's gas.

Previous research has found that in terms of domestic consumption of Russia's natural gas, major contradictions exist beyond the differentiation of prices charged to Russian, CIS, and European end consumers. Strategic fissures have been observed among the preferences of regional elites who want to control more of the financial flows that are derived from hydrocarbons on their territory and companies that prefer to maximise their profits abroad on the world market. A zero sum game over finite hydrocarbons may develop if a structural balance between regional socio-economic needs and corporate profits is not maintained by federal authorities.[18]

In a worse case scenario, the Russian plan to gasify the regions would end up wasting more gas in the long run by committing resources to inefficient power plants for municipal heating of flats that lack proper insulation, metering and other incentives that promote conservation on the part of individual consumers.

Institutional structures & resource rent flow: The relation among Russia's regions and the federal centre is a key factor in determining the structure of the country's energy sector (Dusseault 2008). Variations in asset ownership cannot be generalised especially when analysing regional energy sector structures. Therefore, subsequent rent sharing carried out by the federal centre has resulted in an imbalanced distribution

[16] Gazprom Reshuffle Follows Warnings of Domestic Gas Shortage http://www.jamestown.org/single/?no_cache=1&tx_ttnews[tt_news]=32250
[17] In 2007 the Russian government set aside 760.5 m USD for gasification in 58 of the country's regions. See http://en.rian.ru/russia/20070218/60911275.html
[18] Interview with Krasnoyarsk governor Khloponin in 2007. (Expert 44 (585): 2007)

system for political as well as socio-economic costs and benefits among the federation's 82 regions.[19] Cooperation among regional elites, federal monopolies, and the business community are highly personalised, with final say resting with the presidential administration in Moscow (Dusseault 2008).

Energy sector entities' expectations, risk assessments, and resulting strategic agency are varied. The nature and degree of variation does not depend solely on actors' understanding of the policy environment or their position along the value chain. An additional factor may be an actors' particular interpretation of the value of the good which they are attempting to maximise. Businesses interpret hydrocarbons as basic economic goods. At different stages of a company's value chain (power generation, processing, or export), profit derived from raw natural gas and oil, increases or falls depending on the presence and structure of several externalities (world demand & price).

Simultaneously, regional and the federal administration perceive oil and natural gas differently. Regional hydrocarbons are not purely economic in nature but resources that possess varying degrees of social benefits for the regional population and political value for the administrative elite (regional gasification).[20] For federal elites, the country's hydrocarbons represent massive budget revenues for federal coffers.

Consequentially, resources provide a large degree of political and economic legitimacy as long as the policies with which the business community and the political administration are associated have benefits for other sectors of the trade and society on the whole. In the present Russian system, these relationships among actors and structures are under-institutionalised. According to this conceptualisation, it is very difficult to imagine that long term efforts to further develop priority projects in the energy sector can be coordinated without a monopoly actor, be it the Kremlin, Rosneft, or Gazprom.

[19] It may be the case that federal level authorities or businesses presently treat competition among the regions or businesses as a zero sum game.
[20] Dusseault 2008.

Transit: Political instability, consumer demand, and economic destabilisation

Although it is not the only state once part of the former Soviet Union that has had difficulties in adjusting to the conditions of the post-soviet energy trade, Ukraine stands out as an example of the squandering of physical assets and financial resources in the wake of unbridled greed and competition over the fractured remnants of the soviet energy value chain.

The costs of political dissonance: For Ukraine, its bickering political elite cannot achieve institutional consensus to set policy vectors in order to deal with priorities such as macro economic policy, energy market deregulation, the high rate of domestic energy intensity, not to mention its obligations as a trade link between Russia and the EU. During January's gas pricing row with Russia, the consequences of short term utility and latent structural incentives have contributed to Ukraine's proclivity to pressure both the upstream and downstream actors in the pursuit of the domestic elite's short-term political interests. In this seemingly endless tit for tat context, no positive developments will occur until the country's administrative elite are able to end their political in-fighting and establish a stable political regime with the longer socio-economic time horizon for the country in mind.

Waste not, want not: US government statistics[21] expect that Ukraine's reliance on natural gas as the primary fuel in the country's overall energy mix will continue to grow at the expense of more traditional sources of power generation such as coal and nuclear. While the news on the environmental front may initial look promising, taken into consideration with the lack of significant domestic sources of natural gas, Ukraine will remain highly dependent on Russian and Turkmen supplies to satisfy the domestic market. What is more worrisome is the country's level of energy intensity. Used as a measure of energy efficiency as a function of consumption in relation to GDP, Ukraine ranks as one of the most energy intensive economies in the world.[22] The message is crystal clear: while political elite's fiddle in Kiev, the countries consumers are haemorrhaging natural gas, wasting a resource that if financial and physical structural conditions turn for the worse, could turn out to be too expensive for the country to afford.

[21] http://www.eia.doe.gov/emeu/cabs/Ukraine/NaturalGas.html
[22] http://www.eia.doe.gov/emeu/cabs/Ukraine/Environment.html

Economic destabilisation: Once again, Kiev is on the verge of another non-payment crisis, both within the domestic market (retailers and wholesalers failing to pay their bills to the national oil & gas company) and externally by failing to clear its new debts with Gazprom. Currently, Ukraine's overall debt for Russian gas deliveries totals $ 1.7 billion. In addition, arguments among the Ukrainians and Russians over the amount of missing gas have yet to be settled. There are looming severe economic consequences for Ukraine if it does not achieve political consensus among the administrative elite. With the outstanding issues of repeated debt and gas price aside, perhaps the country's most precious resource, the pipelines themselves, could be put to risk by lack of investment in maintenance of the system.[23]

A vicious circle of events starting with age and reduced maintenance, thus leading to reductions in capacity reduces the value of the Ukrainian transit corridor from the technical point of view. Add the economic consequences of reduced transit fees due to Gazprom's strategic affinity for pipelines that by-pass existing infrastructure, and Ukraine's ability to garner budgetary flows that keep the country running fall sharply. Strapped of funds and choices, Ukraine may have no other alternative, but to return to sub-optimal strategies including burning coal or nuclear for its primary electricity and heating source. Ultimately, the social impact of a significant drop in the transit system's value could inevitably magnify political instability among the country's elite and damage their legitimacy in the eyes of the public.

Downstream: The magic of the market, institutional vacuum, and the pending infrastructure race

The European energy sector possesses its own deficiencies. The liberalisation of the energy sector has not only changed the way in which companies may do business, it has significantly altered the manner in which strategies are formulated, the perception of specific time horizons for various actors as well as the type of actor which can benefit from the liberalised energy markets.

Market-based panacea: The EU is not a homogeneous entity geographically, institutionally, demographically, economically or in terms of member state energy

[23] A doomsday scenario would see falling budget revenues due to loss of transit volumes and subsequently declining transit fees. This lack of budgetary funds would see falls in investments maintenance, technical upgrades and system expansion. The circle would close with additional declines in line capacity resulting in sharper decreases in transit fees.

needs or policies. Surprisingly, instead of a highly diversified set of actors and interests, the EU energy market is populated predominantly by large enterprises who, now freed from their institutional ties and responsibilities to the state, are primarily concerned with profit maximisation in the downstream: wholesale and retail distribution, power generation, and transit. These dominant firms are accompanied by much smaller actors who fill in the supply gaps in times of consumption peaks or falls in supply.

As a result of the growing imbalance as observed in the market, coordination among actors in the business community, the political sphere or society in general is at a premium. There is no common regulatory framework which would reduce the economic costs of doing business in the energy trade and allow for a more inclusive, balanced and efficient environment for developing the European energy sector for the institutional, financial and social perspectives.

The lack of institutional coordination: Due to the legislative incongruities in the EU of the energy sector, core issues such as access to upstream supplies have become increasingly politicised. The political aspects of the energy security debate create unfavourable business conditions for firms associated with the energy trade. A rift is developing among businesses and political interests in that both groups perceive the time horizon in a very different way.

Businesses rely upon stable markets for their goods as well as garnering investments. In order to be profitable, businesses must take a longer time horizon due to lead times for infrastructure development and the recovery of costs due to the initial capital inlay. For politicians, their time horizon is dependent on their time in office; issues such as energy security have a more immediate time horizon and often their positions ignore the time-based constraints placed on the business community enforced by the technological and / or physical aspects of the energy trade.

More is better: Without an overarching and integrated institutional structure to set tangible rules for preference formation and actor agency beyond bottom line economics, the EU is establishing conditions under which the pipelines described above will exacerbate the growing divide among the energy rich and energy poor member states. While countries with large economies such as Germany and Italy will positively benefit from Nord Stream and South Stream, Poland and the Baltic States are at risk of becoming marginalised in energy terms as flows through Brotherhood

(Ukraine) and the Baltic pipeline system dry up due to technical and external strategic choices (discussed above).

What conceivably would remain as viable policy options is the pursuit of more unilateral, and possibly in the long term more expensive, choices such as LNG, coal, nuclear or smaller pipelines to sources in the North Sea (Norway). Although taken individually, these discussions may not seem that risky at the national or local level. Nevertheless, member states must realise that unrealistic expectations for the cumulative success of individual energy policies through endless diversification of supplies or infrastructure may well serve to undermine energy security for the whole of Europe.

Opening the Pandora's Box: Price and value

Underpinning the discussions concerning the majority of physical, informational, institutional and financial factors along all sectors of the energy value chain is price. The concept of how much a specific good or commodity costs provides a relatively accurate benchmark with which consumers, transit states and producers may measure the risks and benefits associated with maximising their own competitive strategies in the energy trade.

Specific considerations:

- Conceivably, differences in wellhead prices at various fields go a long way to determine the profitability and eventual viability of specific infrastructure projects as in the case of Nabucco and South Stream with potential Turkmen and Azeri gas supplies;
- That having been said, for producers to maximise the value of their resources, it may be a sound strategy to target a specific field or group of fields for a diversified set of consumers, i.e. Shtokman. (LNG to the USA, PLG to Europe, or Yamal with smaller fields contributing through the productions of value added products (methanol) to the domestic and export markets, while the peninsula's giant fields are set for export;
- Changes in pricing can determine to a great extent value of infrastructure, as in the case of Belarus and Ukraine, which by 2015, seemingly run the risk of pricing

themselves out of the transit business to the EU from Russia thus squandering their infrastructure assets' competitive value (Mitrova et al. 2008: 448);

- Cheaper prices attributable to gas on gas competition brought about by increased and diversified imports may not bode well for Europe, especially if liberalisation of Russian domestic market prices approach or exceed those paid in Europe; and
- Subsequently sub-optimal pricing may lead to the squandering of gas by providing incentives for it use in municipal heating while failing to take advantages of the commodity's potential value added environmental, technical and chemical properties in industry, transport, and power generation.

Recommendations and conclusions: More is not necessarily better

Despite the unintended consequences of structural changes in the European energy sector, concrete solutions to contemporary challenges such as the transit issue are within our grasp. Unlike the directives put forward by the EU expounding on the commission's conceptualisation of energy security as an external matter, Europe's energy security begins with the member states and the executive bodies in Brussels rests with the settling of the transit crisis and ends with the opening up of the upstream to foreign capital investment.

Putting the European energy sector in order: energy mix, infrastructure, & regulatory frameworks

For the EU, improved energy mix is a key factor. While allowing for states to reduce their dependence on a primary geographical source for their power generation and heating needs, a diversified energy mix subsequently increases the competition among various fuels employed in consumer states' power and heat sectors. As an additional result, the increase in competition among basic commodities such as wind, bio, nuclear, oil, piped gas and LNG may allow for these commodities to be valued more accurately according to their positive and negative technical and financial properties.[24]

[24] Natural gas is the environmentally cleanest and technically most efficient fossil fuel compared to oil and coal under existing technical conditions. Subsequently, natural gas should be valued higher according to its environmental and other attributes. Under optimal pricing conditions, costs for the fuel would increase, possibly leading to improved profit lines and less waste. Excerpt was taken from author interview with Gazum executive, March 2009.

Although pursuing diversified energy strategies seems well suited to individual member state preferences, the EU must take more responsibility is the reigning in of the "go-it-alone" infrastructure strategy. Member states must realise that unrealistic expectations for the cumulative success of individual energy policies through endless diversification of supplies or infrastructure may well serve to undermine energy security for the whole of Europe.

In terms of infrastructure, decision-making and investment in infrastructure is cyclical. Pipelines that have served past their technical life expectancy need to be replaced; nuclear power plants must be decommissioned at the end of their production cycle and replacements built. Technological advances also add to the cyclical nature of the business by providing the opportunity to cut production costs through improvements in efficiency or the transition to new fuels (coal to oil; oil to gas).[25]

The time factor complicates or lengthens the development process; political decisions take up to 4 years to approve of a new LNG plant for example. Lead times on building the plant average anywhere for 5 to ten years. Timing and interpretation of structures which define the policy environment by actors are crucial in determining the suitability of a particular strategic choice. The right choice made at the wrong time or under misinterpreted conditions may lead to increased costs or even an unnecessary waste of capital investment without the hope of recouping a part of the initial capital inlay. All of this points to the needs for increased cooperation among member states along with coordination from Brussels.

For example, an energy hub based upon existing infrastructure in North-Eastern Europe is a possibility. The completion of the Baltic connector pipeline[26] between Finland and Estonia would link the Baltic pipeline system built during the Soviet period in Estonia, Latvia and Lithuania with Finland. Upgrading of the existing infrastructure, construction of additional storage capacity as well as building a regional LNG terminal would allow for more flexibility in the Baltic gas market allowing for transfers from one country to another based on need. However, the questions of coordination, costs and of access to upstream supplies would remain large question marks.

[25] Excerpt was taken from author interview with Gazum executive, March 2009.
[26] Excerpt was taken from author interview with Gazum executive, March 2009.

In order to coordinate local (energy mix) and regional initiatives (infrastructure & markets) the EU energy sector needs a regulatory framework which would make it easier to distribute the economic, social and political costs and benefits associated with the energy trade. A more long term and predictable policy environment would allow the states and business community to better coordinate their interests and strategies and allow for a more balanced approach to creating a more flexible and nuanced energy sector for the power demands of the 21st century.

Keeping the gas flowing: stewardship, investment & maintenance

For a start, the ability of transit states to defect from their obligations as a crucial link in the energy value chain between consumers in Europe and producers upstream needs to be curtailed. As the January crisis clearly demonstrated, strong rent-based structural incentives exist for elites in transit states to play both producers off against consumers. Setting aside the tangled web of insider interests in the transit sector, all parties need to find a framework in which to reign in rent-seeking behaviour, provide an environment for long term investment and maintain the profitability of the Ukrainian transit structure for the coming decades.

In terms of common interest, all actors need to share the financial and political risks of ensuring the continued flow of energy to consumers along the whole length of the value chain. The establishment of a transit corporation among Russia, Ukraine, and the EU to directly regulate investment maintenance and expansion of Ukraine's pipeline system is one option. The corporation mechanism would provide the profit-making stimulus to all the stockholders, while simultaneously tying profit maximisation to the transparent and responsible management of the network. The longer time horizon for success would additionally limit the impulse to extract quick rents by limiting short term gains provided by one off payment strategies.[27]

[27] With the announcement of a € 1.85 billion offer from the EU Commission to provide maintenance for the Ukrainian transit system, Brussels' policy may serve to reinforce negative incentives for an open-ended cycle of payment for Ukrainian compliance on transit issues if enforcement mechanisms and sanctions are not incorporated into any future loan agreement with the Ukrainian government. Ukraine Committed to Clarity on Energy http://www.europeanvoice.com/article/2009/03/ukraine-%E2%80%98committed%27-to-clarity-on-energy/64380.aspx

Opening up the upstream: hubris revisited?

Before any discussion concerning the specific mechanisms that need to be in place for upstream investment in Russia's greenfields to occur, a quick discussion concerning the physical challenges posed by Russia's gas sector need to be taken into account. According to Remes (2008), there are several inter-related structural factors that are at play:

- The shifting geographical location of Russia's new fields dictates increasing development costs;
- Gazprom needs to find a way in which to gradually shift production from its brownfields to the greenfield projects while maintaining transit and storage capacity;
- Concerning transit, Russia needs to guarantee fair access to trunk lines for all producers while setting fair transit fees to maintain the existing infrastructure;
- Domestic price reform needs to take place in order for Gazprom to become profitable as a supplier to the Russian market; and
- Gazprom should divest itself of assets which make it more difficult for investors to assess the company's net worth as well as hinder transparent and efficient management of the company.

The IOC's unhappy involvement in projects such as Sakhalin II and Kovytka dampen sober investors' enthusiasm for putting money on a massive scale in the Russian upstream. At the same time, smaller foreign firms have made inroads into prospectively profitable projects in both gas and oil (Dusseault 2008).[28] The question is not if the investment will be profitable, but how outside investment can be protected by an institutional system that is just becoming adjusted to the concept of underwriting long-term financial risks of foreign partners.

As in the case of transit, a regulatory commission comprised of relevant Russian government (both regional and federal) representatives, domestic and foreign investors, as well as analytical experts may be a step in the right direction. The body would oversee the investment, maintenance, and expansion of the upstream sector,

[28] Examples from Tomsk Oblast demonstrate that foreign owned companies such as Petro-Neft Plc and Imperial Energy have garnered production licenses, increased production, expanded their business activities into the construction of minor processing facilities and trunk pipelines, while maintaining a balanced business relationship with regional and federal business and administrative elites.

while ensuring the rights of all actors would be protected against arbitrary predatory behaviour (in the case of licensing and taxation), access issues (fields and pipelines), minority shareholder rights and environmental concerns.

One last thought …

The main caveat with all the recommendations above concerns the combination of the nature of actors' strategic choices, the conditions under which these choices are made and the suitability of those strategies in the context of the existing policy environment. Up to now, the track record along the European energy value chain has been wrought with political upheaval and sub-optimal policy choices which valued short-term macro-solutions over longer term, step by step confidence building micro approaches. What becomes of energy trade in Europe may depend upon a fundamental re-thinking of energy based on the understanding of the good as a purely economic commodity; and our institutional ability to coordinate the energy trade as a collective across a vast landscape of divergent economic and political interests.

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The impact of Nord Stream, South Stream on the gas transit via Ukraine and security of gas supplies to Ukraine and the EU

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Energy strategy of the Russian Federation as an inductor of bypass projects

The roots for Russian initiatives for the projects Nord Stream and South Stream, by-passing countries of North Europe (Finland, Sweden), Central Eastern Europe (Belarus, Poland, Ukraine) and the Baltic States are contained in the basic document on Energy strategy of Russia for the period till 2020 adopted by the Government of Russian Federation on August 28th, 2003. Since then, a number of events have taken place, which directly or indirectly confirmed one of the most important key contents of the document: "*Russia has significant reserves of energy sources and powerful fuel and energy complex that forms background for development of the economics and instruments of internal and foreign policies realization*" (http://www.gazprom.ru/articles/article2378.shtml).

The effectiveness of use of the energy sources as a CH-weapon (Appendix 1) was demonstrated during the gas crisis between Russia and Ukraine in winter 2006, oil conflict between Russia and Belarus in 2007 and during the most large-scale act of "gas attack" from the Russian Federation against Ukraine and the EU in January 2009. The aforementioned examples have shown Russia that effective use of energy supply dependency factor provides a specific type of influence against the countries, which try to lead their own policies and which stick to Russia's opinion.

In the process of Energy Strategy implementation Russia concentrates attention onto the state companies, among which Gazprom Company is the biggest one. The official web site of the company says, that "the *strategic goal is to make a Gazprom Company a leader among the global energy companies through development of new markets, diversification of activities, and assurance of supply reliability*" (http://www.gazprom.ru/articles/article2378.shtml). In reality, it means acquisition of foreign assets for instituting control over the energy supplies along the whole network of upstream – midstream – downstream.

Russia develops its activity in the gas sphere mainly on the basis of a necessity to "*get maximum profit from gas export and reduction of possible export profit loss from transition to spot gas trade in Europe through keeping a single export channel for gas export and entering into long-term contracts...*" (Energy Strategy of Russian Federation till 2020, 70).

It is being achieved via long-term contracts among Gazprom and several European energy companies with the period of validity from 25 to 35 years. According to these contracts the Russian company is obliged to supply contracted gas volumes to a certain hub in Europe. This means that the company has to secure production and transportation of appropriate gas volumes through provision of relevant resources and its rate of growth through putting into operation the new gas fields and expansion of transport infrastructure.

The Energy Strategy of Russia in the structure of natural gas supply for 2002 contains the following: "*nowadays the basic deposits of Western Siberia that provide the main part of the current production, are considerably worked out (Medvezhye deposit is worked out for 75,6 percent, Urengoy (Cenomanian stage) for 65,4 percent, Yamburg (Cenomanian stage) for 54,1 percent). In 2002 the sources that have decreasing production of gas provided more than 80 percent of Russian gas.*" (Energy Strategy of Russian Federation till 2020, 65).

"*… To support the production in the sources with advanced stage of production, as well as to take additional steps for making use of remaining low-pressure gas, the new technological solutions and significant additional extra-budgetary resources shall be needed*" (Energy Strategy of Russian Federation till 2020, 66).

The document describes the possibilities for Russian gas sector development based on different perspectives: "*Under the favorable external and internal conditions the gas production in Western Siberia may reach 565 bcm in 2010 and 520-540 bcm in 2020. Under a critical condition the gas production in Yamal shall be postponed and the general production in Western Siberia shall steadily slow down during the whole reviewed period*". (Energy Strategy of Russian Federation till 2020, 66)

Despite the officially proclaimed strategy of Gazprom development that outlines "*till 2010 the volume of Gazprom gas production shall reach at least 570 billion cubic meters*" (http://www.gazprom.ru/articles/strategy.shtml), since the beginning of 2009 the Russian monopolist had already changed several times the figures of the planned level of gas production for the current year. Firstly, the maximum point of 550 bcm in 2008 decreased to 510 bcm in the beginning of February 2009; and according to the statement of the Deputy CEO of Gazprom Mr. Valeriy Golubev on April 9, 2009, currently the company plans to produce only 492 bcm of gas till the end of 2009.

However, there is still enough time to review the figures and as the practice shows, this overview may take place more than once and most likely it will move the figures down. Economic recession in the EU and reduction of energy consumption in Europe with a simultaneous decrease in imports provides a perfect opportunity to Russia to hide from the customers the real scale of national gas production problems in the hardly-access regions of Siberia and Arctic.

It was the beginning of the current decade when it became known that Russia understood the whole seriousness of the current deficit of resources; and that was also confirmed by the fact that on April 10, 2003 Gazprom signed 25-year contract with Turkmenneftegas. The Russian monopolist has insured its future risks by signing this contract.

The most bothering fact in the issue of current gas production decline in Russia is that everything is explained by the reduction of demand on gas in the EU and Ukraine as main gas consumers. At the same time Gazprom does not explain how the gas production decrease is achieved. From the technical point of view there are at least two main alternatives:

1) Send a part of produced gas to fill in the gas storages in the territory of Russia. The program of the gas storage capacity extension is being boosted in the recent years (from actual 64 bcm to 82 bcm in 2010).
(http://www.gazprom.ru/news/2009/04/090950_35788.shtml; http://www.gazprom.ru/articles/article23563.shtml)

2) Decommissioning of a part of production wells from the balance of Gazprom because of depletion of sources.

The first indicator for of the latter was the statement of Russian Prime Minister V. Putin in January 2009, which Gazprom was made to shut down over 100 wells (http://www.newsru.com/finance/11jan2009/ard.html). It was explained by the conflict with Ukraine. However, there are some evidences, that the deep reason for such a behavior is the sharp decrease of wells' yield. Moreover, this information did not have further details and the shut down wells were not pointed out.

Both variants indicate a dangerous situation that is beginning to appear in the Russian gas balance and brings into a question the possibility of completion of export obligations: "*Under condition of absence of compensation of investments for the coming period the risk of insufficient development of the gas industry will be increased, and that may require an increase of gas imports from Central Asian states or limit gas exports*" (Energy Strategy of RF till 2020, 70) or, we may add, to manipulate the volumes and directions of export under condition that additional pipeline infrastructure that provides those possibilities shall be completed.

Despite the continuation of information campaign to support projects Nord Stream and South Stream their practical implementation has been done mostly on paper. In the beginning of April 2009, the Russian-European Consortium Nord Stream AG proclaimed again about the change of the route in which the pipeline has to go through the Baltic Sea (http://www.dw-world.de/dw/article/0,,3618249,00.html). That means that the approval procedure in the public authorities of the concerned countries has to be repeated and shall take much time.

Even more unrealistic perspective is the South Stream, because in fact there is not even a basic agreement between the project initiators – Russian Gazprom and Italian ENI (http://www.capital-ru.trend.az/oil/electro/1453288.html). The parties are unable to arrange profit distribution of gas sells, volume of work of each party during construction of land part of this pipeline and shares of the companies in project management.

The greater concern is the recent statement of Italian minister of economic development Claudio Scajola that declared plans to extend the operating pipeline Blue Stream to Italy. It caused even greater resonance reaction than the Ukrainian proposal in Brussels concerning the possibility of increasing the capacity of Ukrainian gas transportation system for 60 bcm annually, because in case of implementing such an infrastructure format such countries as Bulgaria and Greece on one hand, and Serbia, Hungary and Austria on the other hand shall be out of the game. These are the countries that are expected to receive gas after the project South Stream is constructed.

Flow assessment

One of the key obstacles on the path to a common foreign policy on energy of the EU is, among others, the commercial interest of separate European monopolist companies and their energy business with Russia. The latter one concerns close cooperation of German companies E.ON Ruhrgas and Wintershall Holding and Italian company ENI with Gazprom. The same stands true about the Dutch company Gasunie and French Gaz de France - Suez. They are involved in two projects: the South Stream and the Nord Stream.

Strategy and impact of the Nord Stream

Central and Eastern European countries historically dependent on Russia's energy painfully respond to new projects of oil and gas supply to Europe. When the Baltic States, Poland and Sweden actively oppose the Nord Stream gas pipeline, Germany, which is the Russia's main partner in this Project, says that it is not a German Project but a European one. *"It is a European not a German Project, that many EU member states will be able to profit from; it is that French, Dutch, British, Danish and German companies have ordered large quantities of gas, which will be delivered by the Nord Stream pipeline… So, the Nord Stream pipeline is a very important contribution to the Europe's energy security,"* said Deputy Foreign Minister of Germany Gernot Erler at the IFRI Conference (European Energy Relations with Russia and Central Asia, IFRI 1.2.2008, Brussels). Russia managed to convince its European partners of the need to develop alternative transit routes.

In reality, gas crisis in January became one of the steps to prepare reorientation of a part of gas volumes of the Western Siberia from Ukrainian direction to the Nord Stream. Although, taking the initial concept into consideration, the construction of such an expensive pipeline nowadays does not comply with the present realities and makes to shape a series of problematic issues, the main of them are the following:

- Absence of additional gas volumes from new gas fields;
- Project financing;
- Ignorance of problems of the other EU member states;
- Further increase of the EU dependency on gas supply from Russia.

Absence of additional gas volumes from new gas fields

Under the agreement signed in September 2005, during the visit of Russia's President Vladimir Putin to Germany, the Nord Stream was designed to meet the growing demands of the European Union, as Gazprom officially declared.

According to different estimates, the need of the Community for imported natural gas is pre-estimated to increase from 300 bcm to 715 bcm per annum in 2030 (Susanne Nies, Oil and Gas to Europe, IFRI Energy Program, Brussels, 27.2.2008). In other words, over the next 22 years the EU has to ensure double volume of supplied gas or 400 bcm per annum. The main needs for imported gas in the future shall be met at the cost of supply of some 500 bcm of the natural gas through pipelines, of which more than 300 bcm require new sources and routes. In 2030, Russia is forecasted to satisfy 29 % of the EU's needs for imported gas or 207 bcm per annum, in comparison with 150 bcm nowadays. Having project capacity of 55 billion cubic meters, the Nord Stream should become a way to transit additional gas volumes to meet the EU's growing demands.

In the beginning of 1997, the Project of North European gas pipeline was designed to transit gas from a huge the Shtokman field in the Barents Sea with the reserves of 3,700 bcm and project capacity of 67 billion cubic meters. In this context the project corresponds to logic – new infrastructure for new resources. This project intention did not cause any political turbulence. Further, the project concept was revised for another field in 2004. The Yuzhno-Russkoye field with reserves of 700 bcm and capacity of 25 bcm per annum was defined as the main source for the Nord Stream. It became evident that the gas volumes from the Yuzhno-Russkoye field shall not be enough for the pipeline with the project capacity of 55 bcm per annum. Thereby, a part of gas resources from the Western Siberia fields will be redirected for the Nord Stream.

The initiation ceremony that launched operation on the Yuzhno-Russkoye field was held by Gazprom and BASF on 18 December 2007. As for December 2007 the field produced 15 million cubic meters of gas a day cm or it is only 5.5 bcm per annum. The field was planned to reach full project capacity in 2009, but now it is obviously not true. The question is still if the field will reach full project capacity by the end of construction process of the Nord Stream, especially taking into consideration the financial problems of Gazprom caused by the decreased gas prices for European consumers and the on-going world financial crisis. At least, since the very beginning of 2009 Gazprom has not provided any information on intentions to reach the full capacity of the Yuzhno-

Russkoye field in 2009. The last official information about the state of this field is dated by 2007. In addition, Gazprom produced 549 bcm of gas in 2007 less than the previous year (556 billion cubic meters).

Reaching the full capacity of the Yuzhno-Russkoye field and development of the Shtokman field demands considerable financial investments from the side of Gazprom first of all. Although, previous and current activity of Russian gas monopoly demonstrates a tendency, which shows that Gazprom does not have enough financial resources for implementing such ambitious projects. Gazprom invests too little money in geologic exploration and development of the new fields. Since 2000 to 2006 these investments reached only $ 12.6 billion but Gazprom spent $ 30.6 billion for market operations like buying Sibneft (Gazprom: mode d'emploi pour un suicide énergétique, Rapport IFRI, Mars 2007). Gazprom also considers a possibility of buying assets in Africa, Latin America and Europe, for example a deal of Gazprom with Hungarian Development Bank to create a joint company for gas transit (http://energydialogue.org.ru/?q=taxonomy/term/17). The problem of Gazprom is that investments for development of the new gas fields are not remunerative under the circumstances of prices decrease for consumers in Europe and low prices for Russians who are the principal consumers of Russian gas. Besides, Gazprom's financial indicators are negative.

So, not having enough volumes of natural gas may bring the Nord Stream to the situation of the Blue Stream, which nowadays uses only 30 % of its capacity. Otherwise, the Nord Stream shall be filled with gas from other routes, which go through Ukraine and Belarus. This project might not justify the expectations of Germany, which is the main promoter in construction of the given pipeline.

Project financing

According to the European Commission Report on Energy corridors in the European Union and the neighbouring countries of 2007 (Energy corridors European Union and Neighbouring countries, EUR 22581, European Commission, Directorate-General for Research, 2007), the Nord Stream Company shall have to initiate construction of a pipeline in 2010. The Nord Stream project costs were estimated at € 7.4 billion for two lines. The project financing is provided by the companies, which established the Nord Stream AG. These companies are Gazprom (51 %), Wintershall Holding AG (20 %),

E.ON Ruhrgas AG (20 %) and N.V. Nederlands Gasunie (9 %). The Russian Gazprom, as a principal stakeholder of the company as it was mentioned above, does not have enough money to invest into such an expensive project. Therefore, Gazprom has to search for additional investments. How can Gazprom do it? It may sell a part of its stock certificates or remise them in other companies. Yet this issue remains unsolved. The financial difficulties may at least postpone the deadlines of project implementation.

Ignorance of problems of the other EU member states

The main consumers of gas that is to be transported via the Nord Stream pipeline are Germany, the Great Britain, the Netherlands, France and Denmark. They have the minimum dependency on Russian gas supply among the other EU member states. Now Germany imports 34.4 bcm per annum from Russia, the Great Britain – 8.7 billion cubic meters, the Netherlands – 4.7 billion cubic meters, France – 10.0 bcm (in accordance with official data of 2006). Therefore, Germany is the party, which is most interested in this pipeline. The full capacity of the Nord Stream pipeline can satisfy the gas demands of the states, which joined the project. Under such conditions, the interest of these states in transit of gas from Russia through other land routes is equal to zero. This situation may lead to absence of interests from the mentioned European partners in transit of gas to the Eastern and Central European countries by land.

Everything mentioned above brings to the fact that the countries, which have a deep dependency on gas supply from Russia, like Poland and the Baltic States are out of this important gas line. At least, it is strange that the EU does not agree to proposal of Poland to construct a pipeline by land but insists on constructing a pipeline by sea to Germany and then build connecting lines to Poland and the Baltic States. That in general requires needs more financial investments. The volumes of gas supply through the Nord Stream in comparison to the demands of its main consumers cause deep concerns about the capacity of satisfying the demands of Poland and the Baltic States.

South Stream: Pipeline without new resources

The South Stream was initiated on 23 June 2007 in Rome where the Russian company Gazprom and the Italian company ENI signed the Memorandum. The pipeline should go from the Black Sea coast in Russia to Varna in Bulgaria, and then it goes through Greece and the Adriatic Sea to Italy. Its planned capacity amounts to 30 bcm annually.

According to Gazprom's assessment the cost of the project is € 19-24 billion depending on the route (http://korrespondent.net/business/companies/737326). While the Nord Stream is designed, at least partially, for gas supplies from the new Russian fields, the South Stream pipeline is to transport gas not from Russian fields but from Central Asian and Caspian fields, and primarily from Turkmenistan. Russia does not have the new volumes of gas to transport via this pipeline. Even more, it is an illusion that this project is required because of Russia's reselling gas from Central Asian and the Caspian Region it can only compensate its own deficit of the contracted gas supplies for European consumers. And nobody says about the additional volumes of gas in such a case.

Russia signed an agreement to buy 60 bcm annually from Turkmenistan. A part of this volume is planned to be transported through the Caspian Gas Pipeline, which is planned to be constructed by 2012, and that shall have a capacity of 20 bcm. However, Turkmenistan declared to supply 30-40 bcm of gas more than it can actually provide.

Azerbaijan is another potential source of gas. In 2013, its energy company SOCAR plans to reach the production of 12 bcm of gas from Shah Deniz gas field within implementation of Phase-2. Though, the Nabucco project counts on this gas, Azerbaijan has not provided any guarantees. On the Nabucco Summit on January 27, 2009 in Budapest, the President of Azerbaijan Ilham Aliyev stated that first of all these were the problems with transit contracts, financing and political support, which had to be solved. He also emphasised that Azerbaijan had a lot of proposals and Azerbaijan gas production corresponds to the capabilities of existing gas pipelines. In confirmation of that, on 27 March 2009, in Moscow, the leader of Azeri Energy Company SOCAR Rovnag Abdullayev signed the Memorandum for Azerbaijan gas supply to Russia. Though the agreed volumes are not significant, this agreement diminishes the chances of the European Nabucco project to transport gas from Azerbaijan.

At the same time separate European countries support the South Stream project in accordance to Gazprom's bilateral diplomacy. For example, during the visit of Ferenc Gyurcsany to Moscow on March 10, 2009, Hungary and Russia concluded an agreement that Hungary would join the South Stream project. Gyurcsany stated, that Hungary wished to diversify the gas supplies (http://energydialogue.org.ru/?q=taxonomy/term/17). Earlier, Bulgaria joined the project supported by Italy.

Why do the European participants in the Nabucco project agree to take part in another alternative project - the South Stream? Firstly, the development of two parallel projects offers the EU further diversification of gas supply routes.

Secondly, two pipelines represent just a partial solution to the problem of the EU's growing needs for natural gas. The maximum capacity of both pipelines, the Nabucco and the South Stream, shall total 61 bcm annually or just 20 % of the necessary additional volume of natural gas for the EU in 2030.

Thirdly, in the future the Nabucco project might be completely switched to supplying the Middle East gas, the expected volume of which is estimated at 143 bcm per annum in 2030.

Fourthly, for the EU two projects mean the higher stability of Central Asian gas supply. If one of the key partners (Russia or Turkey) proves to be unreliable, the Community might reimburse its losses at the cost of another route. This might happen in the light of regular conflicts in relations between the EU and Russia (delays with the beginning of negotiations on the New Strategic Agreement), tense situation with Turkey concerning its entry into the Union and a possible destabilisation of the situation in the area densely inhabited by Turkish Kurds close to the gas routes via Turkey's territory.

Fifthly, two new projects represent an opportunity for the EU to influence suppliers and transit states: Russia, Turkey, Azerbaijan, Central Asia countries and Ukraine.

Therefore, in the light of growing needs for natural gas in perspective of 2030, the European Union is interested in two parallel gas pipelines: the Nabucco and the South Stream.

The EU may refuse to compete with Russia and may switch over the gas supplies for Nabucco from Central Asia and the Caspian Region to Iran and Middle East, allowing Russia to transport Central Asian gas through the South Stream pipeline. Although, in such a case despite the possibilities to diversify energy sources the transit capacities remain in the same hands – in the hands of Russian Gazprom. Therefore, arguments of European politicians and experts in favour of the South Stream are illusions. Control of gas supplies from Central Asia and the Caspian Region gives Russia a possibility to

conceal deficit of its own gas production. This factor is not favourable for the EU in the lights of growing demands for gas supply.

Diversification of gas supply routes – strengthening of influence?

Two new gas pipelines shall not solve the main problem of the EU energy security for the coming 20-25 years, which is satisfaction of growing demands on natural gas for the European countries. Absence of dynamics for increase of gas production in Russia shall redirect the gas flows from Ukrainian transit route to the new projects. Here comes a question: what is the reason for the EU member states to invest into the projects (North Stream and South Stream), which shall not provide necessary increase of supply, and shall only partially redistribute the gas supplies from the existing gas corridors: GTS of Ukraine and Belarus.

The existing gas pipelines system in the EU is mainly directed from the East to the West, especially for the Central and Eastern European states. The absence of gas interconnections between states inside the EU results into a situation when the EU is tightly bound to gas needles coming from the Russian Federation.

The Nord Stream and the South Stream projects proposed by Russia, just help to increase the dependency of the EU from Russian supplies, and pull the EUs' financial resources away from the development of energy infrastructure. These resources could be used for constructing a system of gas interconnections.

The Second Strategic Energy Review and the energy – climate package foresee to strengthen energy infrastructure especially Trans-European energy transport network and to fill gaps in it[30]. A special attention should be paid to interconnections between the EU member states and especially to support of remote states and connection of European networks with producing infrastructures. The European Commission has already declared to give € 5 billion from the EU budget for realisation of the infrastructure projects, including € 3.5 billion planed for the EU energy security. Though, the most suffered states will receive less: Bulgaria - € 25 million for Bulgaria – Greece pipeline, Slovakia - € 25 million for connecting its energy infrastructure with Hungary's networks, the Czech Republic - € 25 million for building additional gas

storages. At the same time, Poland will receive € 80 million for building own LNG terminals, € 250 million for building underground storages for energy waste of carbonic acid gas. Such states as France, Germany, Great Britain and Spain will also receive at least € 100 million for realising regional projects to develop gas and electricity networks.

Expectable scenarios for Ukrainian GTS loads under condition of possible implementation of the Russian bypass projects

To analyse the possible variants for Ukrainian GTS loads and its influence on the energy security of Ukraine and EU, we should look at the scenarios formed under the influence of four main probability factors. The results of the analysis are presented in the table below.

Table 1. Simplified matrix table of scenarios' variants for changes of transit gas supply volumes via pipelines from Russia to the EU through Ukraine under condition of the Nord Stream and the South Stream implementation, as well as a full-scale development of Gazprom's production projects on Yamal, Shtokman and Eastern Siberia

Russia **EU**	**1. Production and export increase**	**2. Production and export decrease**	**3. LNG production development**	**4. Shifting of export to APR (Asia-Pacific Region)**
1. Consumption and import increase	1.1. Keeping of volumes with tendencies for increase	1.2. Reduction of volumes close to critical	1.3. Keeping of volumes with tendencies to non-critical reduction	1.4. Keeping of volumes with tendencies to non-critical reduction
2. Consumption and import decline	2.1. Keeping of volumes with tendencies to non-critical reduction	2.2. Critical reduction of volumes	2.3. Instability of transit volumes	2.4. Instability of transit volumes
3. LNG demand and supply growth	3.1. Instability of transit volumes	3.2. Instability of transit volumes	3.3. Instability of transit volumes	3.4. Instability of transit volumes
4. Demand and supply growth for gas from non-Russian sources	4.1. Instability of transit volumes	4.2. Instability of transit volumes	4.3. Instability of transit volumes	4.4. Instability of transit volumes

[30] *Second Strategic Energy Review, EU Energy Security and Solidarity Action Plan, SEC(2008)*

Explanations to the table:

1. Production and export increase scenario is connected with a development of Yamal, Shtokman and Eastern Siberia projects.
2. Production and export decline scenario is connected with an impossibility to implement the production projects in Yamal, Shtokman and Eastern Siberia in time or with their shift for the period after 2020, or even later period.
3. LNG development scenario is connected with theoretically acceptable fundamental gas strategy change in Russia, and reorientation of Gazprom for LNG production and export instead of increasing of gas supply via pipelines.
4. Scenario of shifting export on APR is connected with theoretically acceptable fundamental gas strategy change in Gazprom, and reorientation of the new gas export flows (both natural and LNG) to Asia-Pacific Region markets.
5. Critical transit volumes decline means their decrease to the level, which does not provide zero profitability for GTS functioning.
6. Close to critical transit volumes decline means their decrease to the level of zero profitability for GTS functioning.
7. Non-critical transit volumes decline means the possibility for their decrease to a low but positive level of profitability for GTS functioning.
8. Instability of transit volumes means non-periodic changes of annually transit volumes because of manipulating the directions and gas volumes for economic or non-economic motives.

The analysis of above mentioned variants let us to make some conclusions.

1) GTS of Ukraine shall not only maintain the whole scale of transit volumes, but shall also increase it under condition of production increase in Russia, synchronised with a consumption increase in the EU-countries, which are covered mainly through Russian direction. Under such conditions the maximum load shall have Ukrainian GTS and other gas transportation systems (Nord Stream, South Stream, Blue Stream, and Yamal – Europe). The situation is similar to the one, which took place while putting into operation the gas pipeline Yamal – Europe, where the transit volumes through Ukrainian GTS to EU were slightly reduced, as we can see from the below presented table. Certain transit reduction was most likely connected with the warm winters of

2794, SEC(2008) 2795, Brussels, 3 November 2008

2006-2007 and 2007-2008 in Europe than the reach of the project capacity of Yamal – Europe pipeline in 2005.

Table 2. Gas transit volumes through Ukrainian GTS

Year	Total transit	Transit to EU+ *	Transit to CIS
2000	120.6	109.3	11.3
2001	124.4	105.3	19.1
2002	121.4	106.1	15.3
2003	129.2	112.4	16.8
2004	137.1	120.4	16.7
2005	136.4	121.5	14.9
2006	128.5	113.8	14.7
2007	115.2	112.1	3.7**
2008	119.6	116.9	2.7
2009***	120.0	116.9	3.2

Remarks:

Transit volumes according to official figures of NAK Naftogas of Ukraine (http://www.naftogaz.net/www/2/nakweb.nsf/0/0DF906D861E53FC7C22573FE003F3D66?OpenDocument&Expand=2.2.3&#)

* EU+ -- EU countries + Turkey;

** In fact, only transit via Moldova (after construction of bypass gas pipeline Sokhanovka – Oktyabrskaya transit from Russia to Russia through a short run via East of Ukraine was not performed);

*** Indicative figures for 2009 according to Technical agreement between NAK Naftogas of Ukraine and OAO Gazprom from 6.4.2009.

Thus, if the Nord Stream and the South Stream are implemented under condition of gas consumption increase in the EU, and capability of Russia to meet this increased demands, the role of Ukraine as a transit link shall be preserved (Scenario 1.1.). Furthermore, the transit contract between Naftogas of Ukraine and Gazprom, signed on 19.1.2009 and designed for the period till 2019 suggests, according to the Article 3, that annual gas transit volumes shall be at least 110 bcm, and it is practically similar to

the average annual transit volumes to Europe in the current decade (around 113 bcm). Moreover, the same article also specifies, that "*under condition of available technical possibilities the Contractor (NAK Naftogas of Ukraine – our remark) ensures increase of gas transit volumes …*". And the Article 10 points out the obligation of the party, which does not meet its commitments, to compensate the losses of the other party. If Gazprom is not able to provide the mentioned transit volumes, Naftogas may claim reimbursement (http://www.pravda.com.ua/news/2009/1/22/88303.htm). Of course, as we could see from the experience of relations with Russian monopolist, the contract is not a guaranty for completing perfectly all of its obligations. Nevertheless, indirectly it may be the evidence of Gazprom's uncertainty concerning the implementation of its ambitious projects for both streams, at least, during the coming decade. It is easily explained by the serious problems of putting into operation the new gas minefields in time.

2) Critical decline of Ukrainian GTS load may possible under the following conditions:

- Collapse of gas production in Russia, when the old gas fields of Western Siberia are depleted, and Yamal and Shtokman projects fail to be implemented *("Crisis of a capacity to meet the demand");*
- Refusal of EU to increase gas import from Russia with the perspective to keep its level or even to reduce slightly (*"Minimization of politically motivated energy import").*

A probability of such a problematic situation with gas production in Russia was mentioned by the Deputy CEO of Gazprom Valeriy Golubev on the forum *Fuel and Energy Complex of Russia in XXI Century*. According to the estimations of the newspaper Kommersant, Gazprom for the first time confirmed, that "*gas production decline in Russia may have a long-term character*" (http://www.kommersant.ru/doc.aspx?DocsID=1152922). Golubev informed, that the production decline of the monopoly for 10 % would be maintained during the next four-five years. He said that this figure is contained in the corrected long-term gas balance for the period till 2020. Although, it was mentioned that Yamal, Shtokman and Eastern Siberia were not removed from the agenda, it is clear that the perspective of the new fields' development looks shadowy, as it used to be in the nineties. In this context, it is necessary to mention an estimation contained in one of the versions of a new concept of Energy Strategy of Russian Federation till 2030: "*Under decline of gas production in the main production fields … without development of gas deposits on Yamal peninsula*

the country can't be supplied with this energy source and keep balance of its own demands in fuel and power resources" (Concept of Russia's Energy Strategy for the period till 2030, Draft, Ministry of industry and Energy of Russia, Institute of Energy Strategy, 2007, 85).

Under such conditions it may come to the situation when there will be more pipelines than gas (Scenario 2.2.). Russia may change supply volumes and their directions. In such a case, the Ukrainian GTS would face the threat of critical gas transit reduction, caused by the crisis of Russia's capacity to meet the demands in Europe. Though it shall be indicative not only for Ukrainian GTS but also for all other routes: Yamal – Europe, Nord Stream, South Stream, and Blue Stream.

3) The majority of possible variants concern the situation with instability of transit flows. And it would be indicative not only for Ukrainian GTS but also for all other routes. That is why the conclusion of East European Gas Analyses seems to be absolutely logical:

"*Gas pipelines Nord Stream and South Stream were projected not for the increase of Russian gas supply to Europe and strengthening of the European energy supplies. The new projects of Gazprom allow shutting down selectively the gas supplies to Belarus, Germany, Poland, Hungary, Rumania, Bulgaria and Greece. Therefore, the level of energy security of these countries is decreased"* (http://www.eegas.com/export_plans_ru.htm).

From our point of view, we may deduce that creation of the diversified export pipelines network initiated by Russia was done exactly for the purpose of perspective changes of volumes, directions and prices for the supplied gas, considering the factor, that EU does not have integrated gas supply system. In fact, these projects are diversification ones only for the transit routes, but not for the gas supplier. Taking into account CH-warfare, we may qualify these gas pipelines as the energy penetrators (Appendix 1).

In respect of the energy penetrators as an offensive component of CH-weapon, we can explain active lobbying of the mentioned gas transportation projects by Russia in Europe, despite of the coming up threats for serious resource deficits in production. Construction the significantly proficit infrastructure, Russia counts for a price dictatorship in the future, varying supply volumes for different markets, primarily the European, provoking artificial deficits of energy sources thus achieving price

maximisation. Probably, it is the method that allows to minimise the export incomes reduction under condition of physical decrease of its volumes, as well as to provide the necessary political influence against these of other processes in the countries, which Russia is interested in.

Russia continues to pay great attention to the upstream area outside its borders. In the above mentioned project of a new Energy Strategy of Russian Federation for the period till 2030 it is proposed to implement the new innovations. In particular, to strengthen the use of energy sources and pipeline infrastructure in the post-Soviet territory "*Russia is able to … secure its influence on other resource centers, connected with Russia through a common energy transportation infrastructure (Kazakhstan and Central Asia republics)*" (Concept of Russia's Energy Strategy for the period till 2030, project, Ministry of Industry and Energy of Russia, Institute of Energy Strategy, 2007 36). A new element of energy politics is proposed – dispatch of energy sources by Russia – "*… the role of Russia shall be determined not only through capacities of our country to produce and supply own energy products, but also through capacities for effective dispatching of transit energy flows from the third countries…*" (Concept of Russia's Energy Strategy for the period till 2030, project, Ministry of Industry and Energy of Russia, Institute of Energy Strategy, 2007, 78). Using its monopolist location for transit in regard to the Central Asia countries, Russia aims to determine independently the parameters for gas transit from this region to the EU market.

In this context, the projects South Stream and Blue Stream may become pipelines, which shall be supplied from gas sources of Central Asia. Gas would go to Europe, dispatched by Gazprom, though it could be directed to EU bypassing Russia – through expected routes of the South Gas Corridor (projects Nabucco, White Stream). The EU fails to develop these projects because of a single voice lack concerning the energy policy and domination of the bilateral relations of Russia and the leading countries of the Community: Germany, Italy, and France.

As for Ukraine, the key transit role of its GTS is determined not only due to the pipeline routes passing through its territory. The huge importance belongs to UGSF with a general active storage capacity of 32.5 bcm. These are the UGSF that provide stability and reliability of supply during the winter peak consumption period in the EU. Interconnectivity and ability for switching of the main pipelines provides reliability of gas supply during accidents and other emergencies. That is exactly what the other

transportation routes are lacking: Yamal – Europe, Blue Stream, Nord Stream, South Stream. An accident in any of these directions automatically would cause a breakage in gas supplies.

Examples of 2007: In Ukraine there were two serious technical accidents in the main pipeline Urengoy-Pomary-Uzhgorod on May 7 and December 6. To provide the relief works it took 8 and 11 days respectively in May and December. Despite of December accident, which took place during a winter peak-load for GTS, gas supply to the EU continued to be performed as usual. Instead of the gas pipeline where accident took place, two other pipelines were used: Progress and Soyuz.

It looked absolutely the other way in the case with Yamal – Europe pipeline. In the beginning of September 2008, it was announced that there is a need for technological works on the pipeline in the territory of Poland and Germany. The gas supply for these countries via Belarus direction was stopped on September 2-3, and that caused troubles in Warsaw and Berlin. Gazprom informed that "*gas supply for European customers would be compensated through the increase of transit volumes via alternative routes*". This alternative route was the one via Ukraine (http://www.izvestia.ru/news/news187004).

If we hypothetically think of an accident in the route of Nord Stream or South Stream, it would be only the Ukrainian GTS with its UGSF that could serve as a guaranty for reliable gas supplies to the EU. The Ukrainian UGSF on the border with the EU (Slovakia), under condition of integrating it into the energy space of the Community, is capable of providing the reliability of Eastern supplies to the EU.

Conclusion

In the 1970's, the EU managed able to protect itself from oil weapon through constructing the system of strategic oil reserves. Now, it is time to construct a similar system in gas sector. Universal formula of protection against the use of energy weapon is still unchanged: integrated infrastructure + strategic reserves + diversification = energy security. The EU and Ukraine have to concentrate attention on the necessity of solving the problem of energy weapon use in its gas form from anybody. It is possible through creation of a European Gas Contour (European Integrated Gas Supplying System – EIGSS) – integrated gas supplying system, technically capable of providing

necessary circulation of gas resources from storage points to regions, where deficit appears. The basic component of EIGSS have to be underground gas storage facilities (UGSF), connected to the Contour. In this context, the Ukrainian UGSF could play the main role for EIGSS in the Eastern part of the EU, especially for the countries of Central Europe, which are most dependent on the Eastern supplies. We may conclude that the Czech Presidency in the EU undertakes a very correct step transferring this question into the sphere of implementing the EIGSS idea, and the Declaration of Brussels on March 23, 2009 set the necessary backgrounds for that.

European Energy Transparency Initiative (EETI) can be estimated as the Early warning mechanism, as it foresees assurance of transparency trough the whole chain; production – transportation – consumption. Speaking about gas, a common access of customers, suppliers and transit countries has to be provided to the information in all stages of a technological chain - from the opening of production well to the end-customer. Customers have a right to see: volume of reserves, their increase, production volumes, how much products are coming into the pipelines of the supplier for transportation, how much resources come to the transit system and go leave it, how much finally is received by the customer, as well as prices, tariffs, free capacities of pipelines and so on. It would be rather reasonable for the European Commission and IEA to start a corresponding initiative. Then, some expensive pipelines would have a different look. And the issue of whether the next stream should be implemented or not would be simplified to the priority of implementing projects for production extension: Shtokman, Yamal and others. So, the resources have the primary value and the pipeline infrastructure shall be synchronised in respect to production projects, and not vice versa as it is done in Russia, and what Russia tries to dictate to Europe at the cost of the European tax payers and customers.

Appendix Main definitions

Energy weapon – a complex system of energy use and infrastructure potentials of one country (corporation) with the aim to deliver economic destruction to a potential enemy and/or to get these or other preferences from him and/or cessions political, economic and another character. Energy weapon could be used in the form of energy resources and infrastructure weapon.

Energy sources weapon (CH-weapon) – a systematic use of hydrocarbons (CH – chemical symbol for hydrocarbons) with an irrelevant merchandise goal to deliver economic destruction to a potential enemy and then to get some cessions and/or preferences from him.

Infrastructural weapon – a systematic use of energy infrastructure by one country (corporation) with the aim of energy flows' reorientation to bypass another country for economic or political pressure and receipt of some preferences and cessions.

Energy connectors – established by a producer (owner, exporter) of hydrocarbons communication system together with terminals for energy sources transportation, which connect production regions with consumer market.

Energy penetrator – an energy connector that connects directly supplier and customer with property controlling stake and/or controlled by management on the part of resource supplier (owner), that serves as mechanism for market access and assurance of dominance over it.

EU-Russia gas relations

Leonid Grigoriev and Maria Belova [31]

Contents

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We consider the real business-based RF-EU energy relations as actually excellent for at least last 25 years. The current tensions have been growing in recent years for few reasons: growing prices for energy; uncoordinated reforms in energy legislation of EU; conflicts for gas and transit rents (transit rent-losers' resentments). Unfortunately, Russian handling of these conflicts was far from perfect and gave some more fuel to the debates.

Current trends in Russia – impact of economic crisis

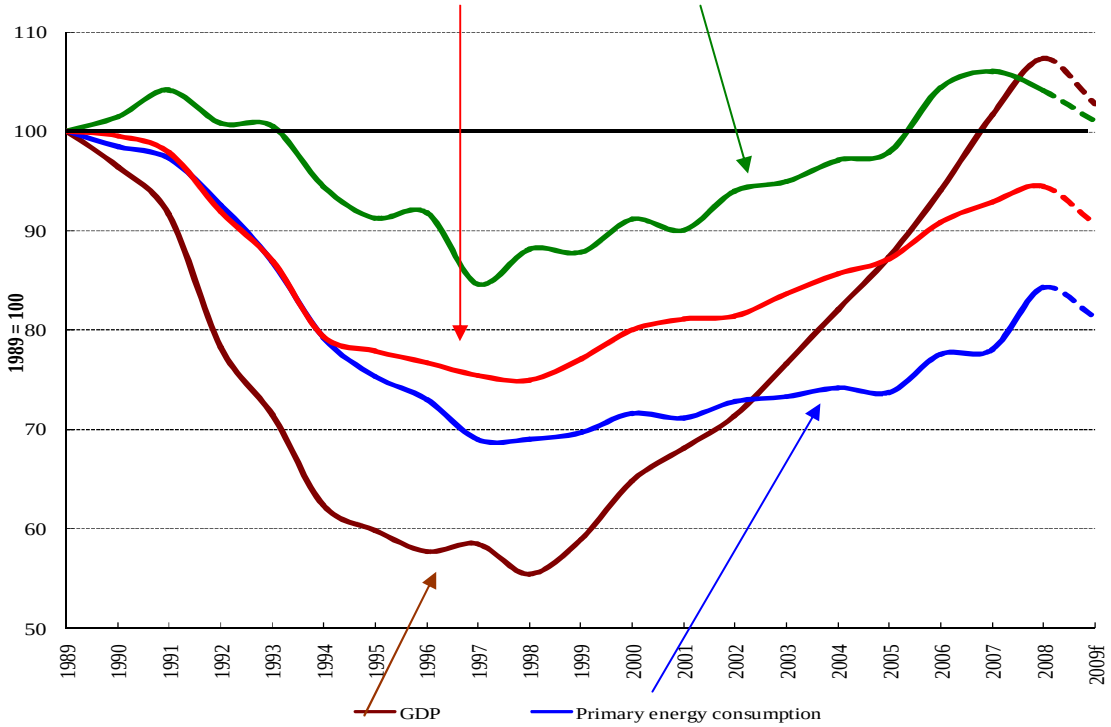
Economic crisis has come to Russia quite unexpectedly. For some months (August-September 2008), Russia's leadership "refused" to believe in the vulnerability of the country's economy to the external shocks. So called decoupling of BRIC was true in the years of the global upturn, but it happened to be not a case in the global recession. American financial crisis worked as a trigger for all the problems of the Russian economy: some left from the planned economy, some from the transitional crisis of the 1990's, some from unresolved issues of upturn of the 2000's.

In recent years, economic growth in Russia was so impressive that observers sometimes were losing the touch with realty – the Russian economy is just coming from the crisis of the magnitude of the American Great Depression of the 1930's (only such crises in the time of peace): minus 43 % GDP, minus one fifth of real personal consumption and minus three quarters of investments (Graph 1). This is very important for Russia and its relations with the EU and gas transit countries. Russia is still country after huge crisis, busy with domestic problems. Russia is concentrating mostly on issues of development: roads, health care, housing, education etc. – but European media does not give adequate coverage for this part. Essentially Russia was just starting in 2007-2008 to turn from problems of transition to modernisation (ten years later than CEE countries). Concept of long-term development was approved in general in September of 2008 with extremely ambitious targets for 2020.

Global recession will have a serious impact on economic priorities in Russia, like in any other country. Main features of the 1999-2008 upturn in Russia should be taken into account: almost 7 % annual GDP growth, above 30 % of GDP for national savings, but only 21 % of capital formation rate to GDP in 2007-2008 (and 17 % before). With an inadequate financial system Russia did not make possible for large companies to get domestic long-term borrowing from national sources, which was a major failure of the

2000's. As a result of the round tripping of national savings abroad the Russian companies were made very dependent of the foreign sources of credit. That created huge problems of financing in 2007-2008. Actually this huge infrastructure investment programme did not start before the recession. And now we expect serious delays in the capital formation again (see Table 1). Russian recession had external trigger, but it also had domestic roots, particularly dependence on oil and gas exports, weak competition, and corruption.

Graph 1. Development of Russian GDP, primary energy consumption, electricity consumption and gas consumption, 1989=100



Source: Federal State Statistics Service, Ministry for Energy and Industry, IEF

The decline of economic activity was so far concentrated in manufacturing, particularly metals, cars, construction materials in sectors of construction and real estate. The economy continued to get worse in January with some flattening in February. GDP contracted 7 % y-o-y in the first quarter of 2009, industrial output plunged y-o-y 16 % in January and 13 % in February. There was contraction in almost all important macroeconomic indicators, with the exceptions of retail trade, which grew 2.4 % m-o-m, and agriculture, which increased 2.6 %.

Production declines have reached the drop experienced in 1994. But in February-March it has practically stopped in a number of sectors, such as metallurgy and the

chemical industry, although production has stabilised at very low levels – average production facilities are working at less than 50 % capacity compared to 80-85 % a year earlier. Stabilisation in these sectors is tied up to slight improvements on foreign markets, and also due to the measures of the government to overcome the crisis in the economy, such as the volume of lending and increased government orders.

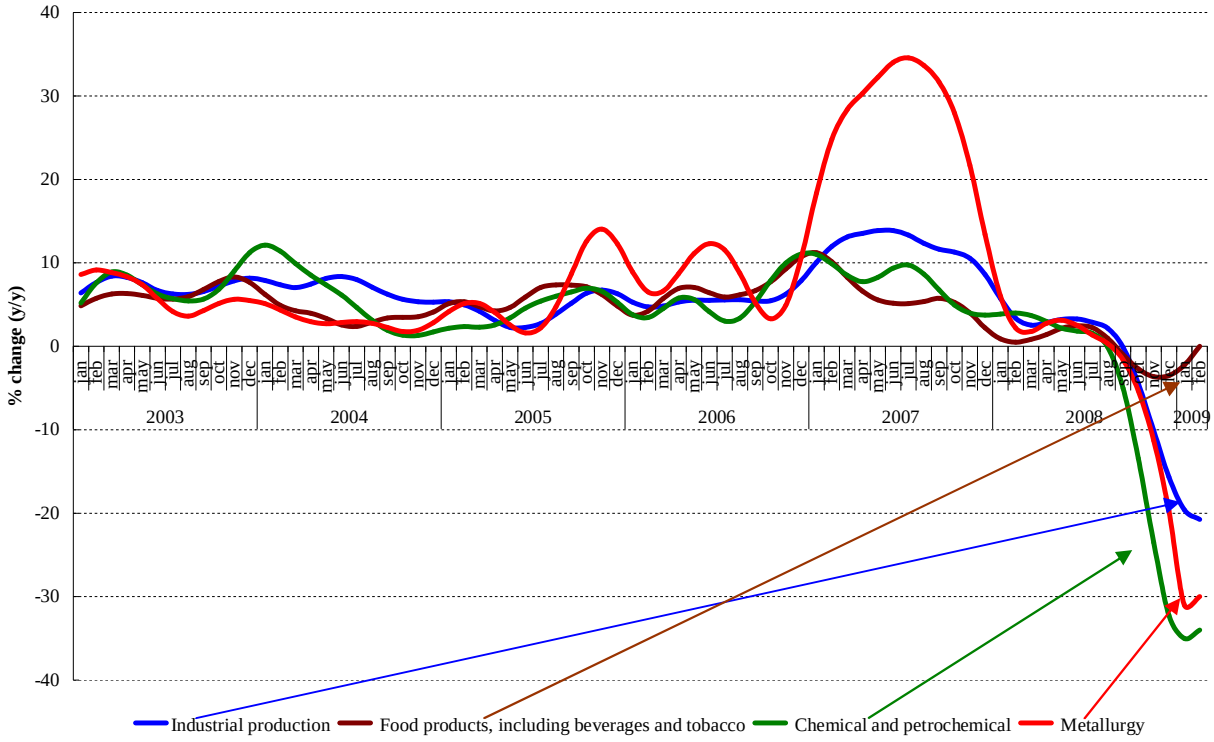
The biggest drop in production in January occurred in machine-building, largely because the majority of car plants and their suppliers shut down. Most auto manufactures continued to work at full capacity in September-November 2008, despite falling demand, which led to a large increase in warehouse supplies. In order to reduce warehouse supplies, most enterprises were forced to remain closed until the end of January, instead of re-opening in mid-January after the two-week Christmas and New Year's holidays. As a result, both car and truck production plummeted. A reduction in investment led to a sharp drop in the production of equipment for industry, construction and agriculture. The production of construction equipment plunged five fold compared to January 2008. The economic situation stabilised somewhat in industry in February, but other key economic sectors – construction and trade – continued to decline amid a sharp drop in consumer spending and falling capital investment in the private sector. Amid relatively stable sales of disposable goods, sales of long-term durable goods have dropped. Car sales plunged 38 % in February and car dealers predict that sales will plummet 50 % in March. Sales of household appliances have also dropped as consumer loans have become harder to get and because of a growth in prices for imported equipment.

Ferrous metal exports plunged by more than one-fourth in January 2009, fertilizer exports were down by a third and timber exports plunged three fold. However, petroleum product exports soared 20 % in January 2009, while crude oil export was down. The food processing shows signs of recovery due to devaluation (Graph 2).

Russia's federal budget deficit – the first time in the 21st century - has become a reality. The government approved a new anti-crisis action programme for 2009 at the meeting on March 19th. And it will be submitted along with an adjusted budget to the Duma. The cost of the anti-crisis measures exceeds 4 trillion Roubles, around $ 120 billion, and they include social measures, support to industry and increasing the stability of the banking system. We do not think the internal concept and integrity of the anti-crisis package is strong enough, since it tries to bring together all the possible proposals

made in the past few months under a single roof. As a result, the majority of the package measures is made up of those which had been proposed but not implemented in these months. Russia's consolidated budget deficit may exceed 8 % of GDP in 2009.

Graph 2. Industrial production dynamic, January 2003 to February 2009



Note: seasonally adjusted data

Source: Federal State Statistics Service, IEF estimates

The Russian stock market was affected by the rally on world commodity markets in March. Russia's benchmark RTS and MICEX indices posted strong gains in early March and had surged to 40 % and 25 % respectively by the end of the month, as the Russian stock markets grew faster than any other emerging market. To some extent that was result of the sharp drop in devaluation expectations on the market and, as a result, to renewed interest in Rouble assets. One may say that was the objective of the controlled devaluation (about 30 % by bi-currency, euro and dollar) mark of success in government policies.

The March rally on global stock markets took place amid a sharp drop in pressure on foreign currency and money markets. For the first time in the past five months, the foreign currency was less attractive for investors than a month earlier. From this point

of view, the Central Bank's policy to quench devaluation expectations can be called a success. Future market rates began again to reflect an adequate "yield-risk" relationship in March, which had not been seen since the beginning of the year. Rouble has become somewhat stronger and one may expect to stay in the corridor for some time given the price of oil in the $ 50-60 / barrel band.

Table 1. Russia's main economic indicators, 1996-2008, 2009 forecast

	1996-1999 (average)	2000-2004 (average)	2005	2006	2007	2008 estimate	2009 forecast
GDP in current prices, $ bn	316	395	764	988	1292	1673	**1200**
GDP growth, %	-0.3	6.9	6.4	6.7	8.1	6.8	**-4.3**
Investment rate, % of GDP	17.2	18.1	16.7	17.6	20.1	21.6	**17.4**
Savings, % of GDP	27.1	33.8	33.5	33.8	32.0	31.0	**30.0**
Exports of oil and oil products, % of GDP	6.7	12.3	15.3	14.9	15.0	16.1	**15.0**
Trade balance, % of GDP	8.4	16.2	15.7	14.1	10.1	9.5	**4.2**
Current account, % of GDP	3.9	11.2	10.9	11.4	6.0	4.8	**1.0**
Consumer price index, %	38.5	15.5	10.9	9.0	11.9	13.2	**15.0**
Industrial production, %	0.8	6.5	4.0	6.3	6.3	3.0	**-6.0**
Real personal income, %	-5.3	11.4	9.3	10.0	10.7	7.0	**-3.0**

Source: Federal State Statistics Service, Ministry for Economic Development, IEF estimates

The financial, oil and gas sectors posted the strongest growth in March 2009 on financial markets – first time since the start of the crisis. But still there are so far no fundamental reasons for a rapid recovery of Russian financial markets. On the whole, interest rates were relatively balanced on the money market in March, without any significant spreads between the Central Bank's credit operations and similar operations on the inter-bank market.

Russia posted a relatively large foreign trade surplus of $ 15.2 billion in January-February 2009. Russia's trade surplus stood at $ 9.4 billion in January because of a sharp drop in imports in January 2009 compared to the same period last year. Russian exports dropped 43 % year-on-year to $ 19.7 billion in January 2009, and fell a tentative 46 % to $ 19.3 billion in February. While oil prices stabilised, metal prices

continued to plummet and most exports were down in physical terms, which had a strong effect on the cost of exports. One would expect a new decline of investments from rather high level of 2007-2008 – 21 % of GDP. Capital formation was finally at reasonable level with about 5 % of GDP for energy investments.

The important feature of the Russian recession 2008-2009 is the much more businesslike approach to macroeconomic and other problems. Debates on the government steps are going on, but the government is able to use some cash reserves, secure banks and deposits. Probably one should mark the absence of panic – enterprises and households are trying to adjust to sudden shock of demand decline. We may expect the sliding investment programme of firms and government; turn to more social oriented spending, but avoiding the new socio-economic shock of early 1990's and 1998. The reduction in capital spending will give the priority to projects with the strong support from the government and leading corporations like it was in recent years. It is a reasonable to suppose that pipelines for the EU will stay high on the priority list.

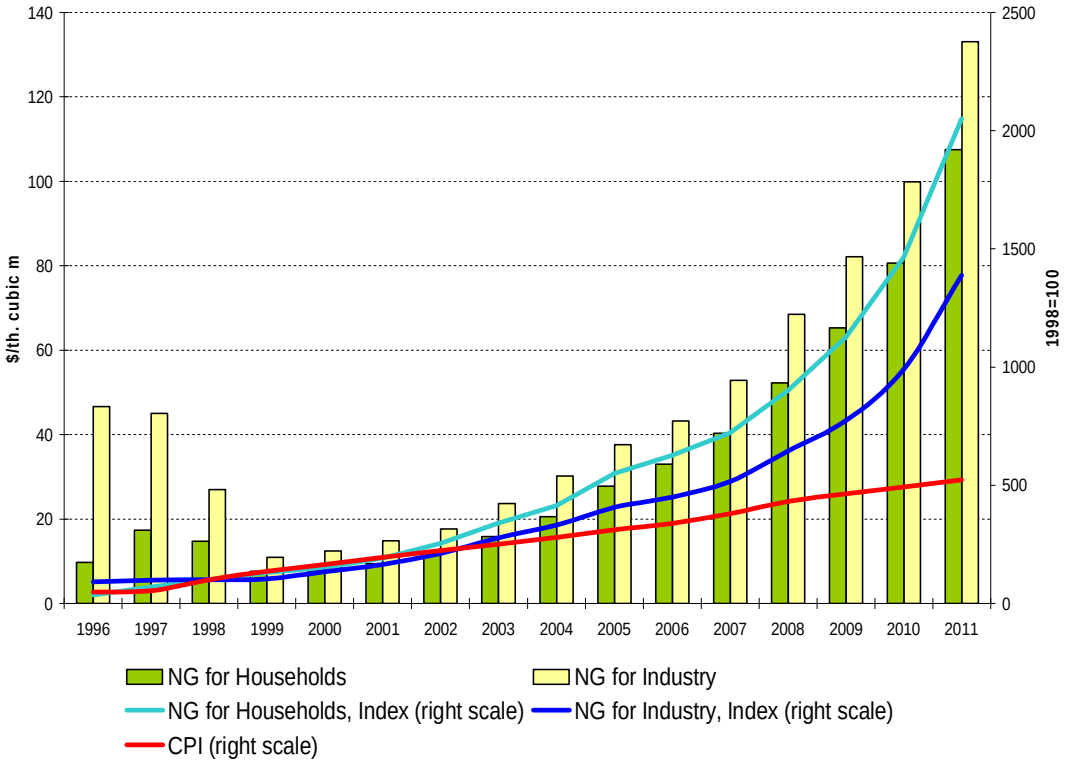
Recent complications of EU-Russia energy relationship

Since 2006 debates on Energy Security has a clear cut dual vision – security of demand for Russia (prices and long-term volumes); security of supply for EU (prices and delivery). For Russia transit conflicts is a cost of turning for politically motivated low prices for Ukraine and some other CIS countries to market pricing. The disappointment for Russian observers and the government is the EU approach which is seen in Moscow as siding with "any other side", regardless the essence of conflict against Russia. The lack of continuity also may be mentioned: Energy Chapter was in the focus in 2006, but was even mentioned by EU and EU members in the conflict of January 2009.

Energy issues and problems, domestic and external, are highly important for Russia's economy and its economic policy, but not to the extent perceived outside. For example, the domestic pricing for gas and electricity is a very complicated problem for the Russian domestic consumers: households and companies in aluminium, steel, paper and fertilizers. Groups of interests - for and against gas tariffs' growth - are rather easy to define: Gazprom and the EU "together" are definitely for higher tariffs in Russia; but domestic consumers, especially producers of electricity, metals and fertilizers are

obviously would prefer to stay with lower tariffs (Graph 3). The agreement of 2004 with the EU on the WTO accession was made with understanding that Russia will keep rising its domestic tariffs rather high. And actually it happened that way – tariff growth was surpassing the consumer price index (CPI), what by many economists was considered as fuelling the domestic inflation.

Graph 3. Russia's domestic natural gas prices, $, 1996-2008, 2009-2011 pre-crisis expectations

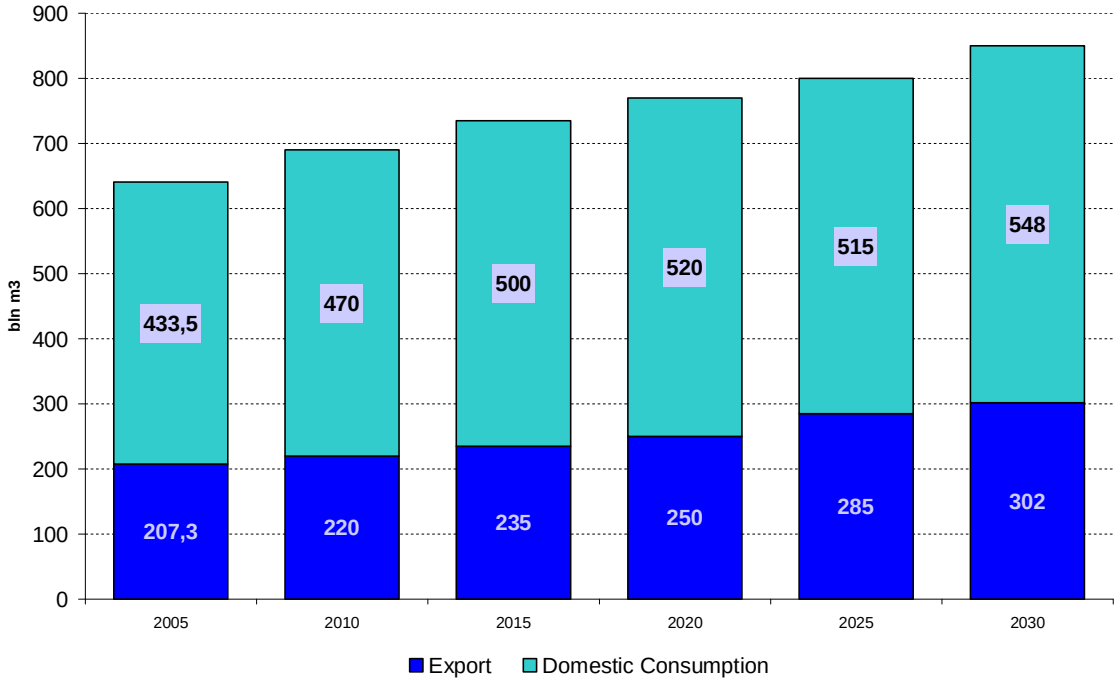


Source: Ministry for Economic Development, FTS, World Bank, IEF.

Interests of the Russian authorities and Gazprom are extremely complicated and not necessarily the same in all points. Gazprom is interested in:

- Producing enough gas for domestic obligations (set by the government) and for foreign long-term contracts;
- Raising domestic prices – currently from $ 50 to $ 100 by 2010 (2/3 of its sales are domestic), but preferable to net-back level to the EU deliveries;
- Development the vertical business company – in electricity and chemicals;
- Formatting (official objectives) the biggest global energy company;
- Non-discriminatory regime for investments in the EU and other regions;
- Predictability of export demand and export prices;
- Incomes for transit via Russia and ("mirror") diversification of routes;
- Secured commercial (non-political) transit to markets, diversification of export channels (LNG in the future);
- Access (investments) to more profitable segments of retail gas markets abroad.

Graph 4. Energy Strategy-2030 gas output forecasts (pre-crisis in the beginning of 2008)



Source: Institute of Energy Strategy

We believe that Russian political approach to the gas industry issues have been reflecting interests of Gazprom to a greater extent upon a time: income, not subsidies. The Russian government's economic interests in the gas sector are hard to describe in full. There is a natural difference between interests of Gazprom and gas consumers in the industries, like metals or chemicals and fertilizers, or population. We know for sure that the government allows the high pace of rising domestic gas tariffs to 20-22% annually, but the company would want faster adjustment. Gazprom was the cash cow to the government (especially during Prime Minister Chernomyrdin) till the early 2000's, reducing its capability to finance its activity before the recent price hike. During current recession domestic tariffs probably will grow somewhat less fast to original expectations.

Both Ukrainian 2006 and 2009, and Belorussian 2007 "price and transit" cases were resolved in a generally satisfactory way for countries directly involved[32]. But outside players are left with feeling of growing Russian control over situation, state or

[32] Political instability in Ukraine is obvious; and for Russian gas interests cannot find any simple way to avoid conflicts.

corporate. Russian policy is always under scrutiny for non-commercial objectives – as it is known: one cannot prove negative on suspicions about Gazprom intentions. While its policy is quite similar to other big players. Russian companies and political players are trying to protect their reasonable interests of income. They were doing the same as the most of observers would do with a similar set of assets, obstacles and transit disadvantages.

Notwithstanding an importance of energy issues in the EU-Russia relationship they were not in the focus of politics until 2006. On the EU side, the main driving force was an idea of formation of single energy market, including accession of new members and liberalisation of markets, with all its contradictory issues.

More attention was given to quite regular issues of gas output in Russia and supply to the EU. Due to the very high gas consumption forecasted in the EU for the period of 2020-2030, the Russians (on government, corporate and expert levels) were often surprised by expectations in EU for them to fill that potential gap between consumption and traditional sources of gas. The Russian side never actually committed itself to this tremendous task, while the predictions on the future EU dependence on Russia were seriously exaggerated.

Current wave of a strong international attention to energy security started in 2006 and was linked with a combination of growing energy demand (and growing concerns about availability of sufficient energy resources), rising energy prices and first Ukrainian conflict. Russia's decided to raise Energy problems at the St. Petersburg G8 Summit with focus on security of energy. Though G8 Summit formulated a list of critically important items in the energy security area, it had not resulted (and possibly could not – because of its status and mission) in a new legislative and/or institutional instruments to support an implementation of the goals it declared. The crisis in the Ukrainian gas transit of 2006 had brought so much of public attention. The necessity of such instruments – at least between the EU, Russia and transit countries - became obvious and even acute in the eyes of politicians.

It resulted in an extensive political pressure from the EU on Russia on an urgent Energy Charter Treaty (ECT) ratification (not on Norway). Since the end of the 1990's, ECT was far from being a favourite of the EU internal energy politics by number of reasons including following:

- It reflected some principles of the energy markets' functioning which the EU has tried to overcome for the EU internal markets since the mid of 1990's. For instance, ECT emphasises that it does not assume a mandatory Third Party Access to the energy infrastructure (for the ECT purposes – transit infrastructure);

- ECT may be viewed (as it was in 1994) as a safeguard of energy supplies with essentially "total energy investments grandfathering" – that may create a problem for "ownership unbundling";

- It was signed and ratified by every EU member state (as well as by the European Union as a single body) and therefore its transit provisions were applied for energy products flows which intersect both borders of a single EU member state. But at the end of the 1990's, the term "transit" was excluded from the internal EU legislation as being in controversy to the "single market" principle.

On the Russian side, the ambiguous attitude to ECT was formed on various reasons, and main concerns were expressed by Gazprom. It was worried that an open transit of Central Asian gas via Russian and Ukrainian gas systems could damage its positions on the European market. Though ECT is dubious in this respect but some EU politicians in practice supported these concerns by their proclamations. As transit provisions were of particular importance for Russia's interests, Russia's State Duma linked a perspective of the Russia's ratification of the ECT with the success of the Transit Protocol negotiations which had started in 1999 (Feigin 2009).

We have to stress that the excessive polarisation on this theme, including "dangers" of excessive EU dependence on external energy supplies, had not helped to make progress in negotiations. There were times when the politicians even overestimated the role of the energy issues in the pan-European scene. The new and the most complicated substantive issue in these relations is the transition state of energy markets status, market and industry regulation - on both sides! In the EU, we can state an ideologisation of this transition phase – as a result of liberalisation dogma which prevailed until very recently. Russian side felt all the time like being pushed into creating some transit regime, which was not in use and not clarified enough in the EU.
In this environment there are real difficulties of reaching a comprehensive and mutually satisfactory agreement. In the very last time new series of uncertainties started to have an impact on the energy perspective, including:

- Climate change challenges;
- "Radical" views on its implications for the EU energy composition.

Scenarios which are a product of these considerations, present pictures of perspective of 2020-2030 in which traditional hydrocarbon fuels may lose their positions in the global energy supply and in the EU external trade. So the questions can be on what would be preferable:

- The tendency to rely in energy scenarios on yet industrially non-tested technologies or on available energy resources?

- Energy self-independence at any cost (including huge budgetary subsidies for alternative energy sources) – or stable external energy relations?

European program on Energy "20-20-20" may change the scope and structure of the EU's energy demand and imports. Still the programme may be delayed by natural technological reasons, and by global recession, started in 2008. The EU's gas output is declining, energy prices are relatively low. We may have a new turn to import of energy. The point is that Energy Security of EU is a very complex problem. And it will be rather hard for anybody to find the solution for the puzzle: more supplies from Russia, but more "independence' from Russian energy supplies.

Let us return back to Energy Charter Treaty and its role during the Ukrainian gas crises 2006 and 2009. As Russian leaders emphasised while the recent Ukrainian crisis and after it, an ECT has limited capacity to act in the crisis circumstances. Nevertheless, in case of latest gas crisis ECT was the only international treaty which was relevant.

ECT and Transit Protocol (TP) offer a foundation for formulating justified approaches to resolving the conflicts. Such provisions would include:

- Disconnection between terms and conditions for gas supply and gas transit;

- An obligation of a transit country to offer in a timely manner terms and conditions for continuation of a transit contract;

- A requirement to justify transit rates based on real costs associated with such transit;

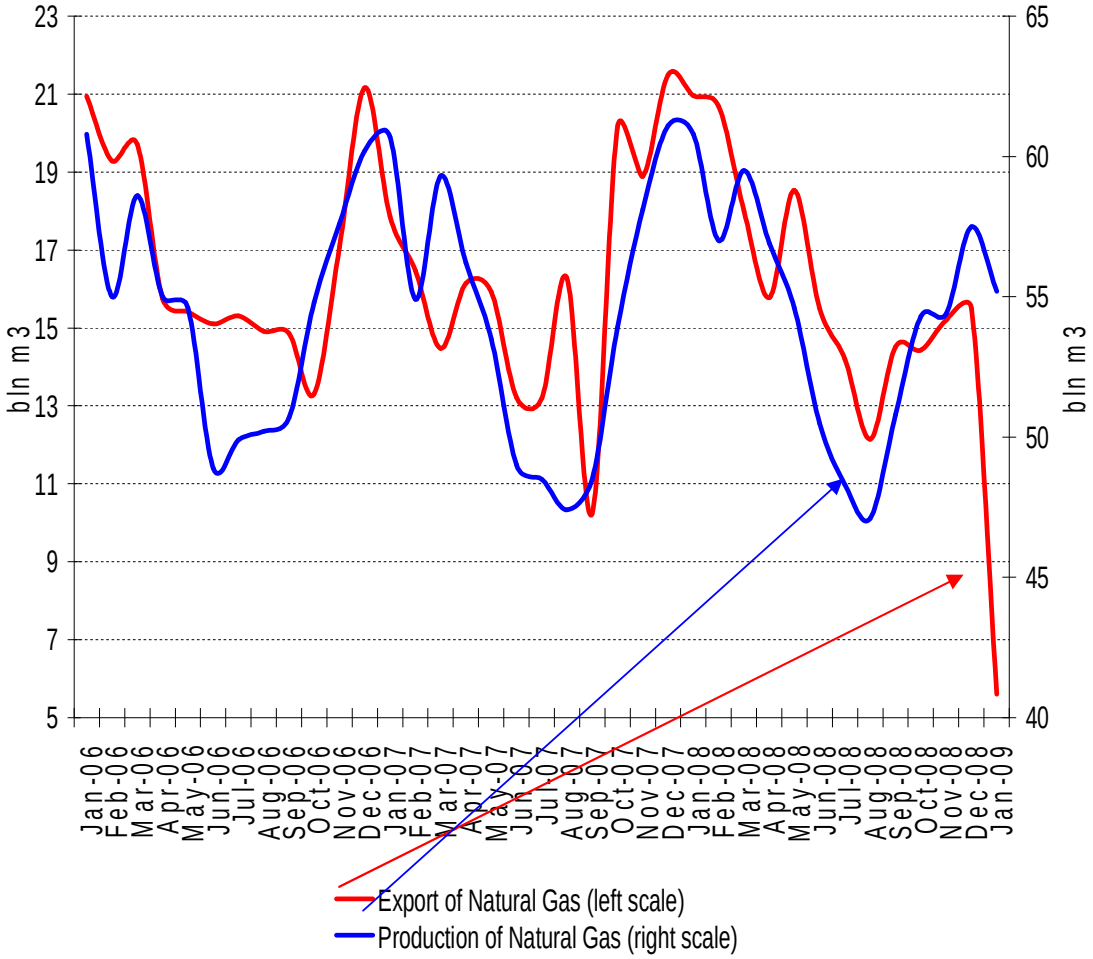
- An opportunity to invoke conciliation procedure (ECT Article 7(7)); in this connection the conciliator establishes an interim tariff based on the above principles (Belova & Feigin 2006).

Applied in a consistent manner these provisions and approaches were quite adequate for drastically reducing for the Russian side the main risks related to interruption of export deliveries of the Russian gas due to lack of settlement of gas supply to the Ukrainian consumers. Since the Ukrainian side ratified ECT, one would expect that it apply the ECT principles as country's international obligation. But in reality only Russia did apply these principles and asked its European partners to bring an action against Ukraine for ECT principles violation. The EU countries preferred not to act in the spirit of the treaty, and there were "fundamentalists of liberalisation" who consider ECT as a sort of potential obstacles to reaching their goals. It is a little premature to finalise lessons of recent Ukrainian gas transit crisis, but it is important to mention that again transit issues and security of transit flows became in the focus of the problems. And again ECT was put into the centre of discussions.

January 2009 abundantly demonstrated that European institutions - whether the European Commission and its presidency, the Energy Charter Treaty or European gas companies - have no significant leverage over either Russia and Ukraine to resolve a bilateral energy dispute and this is not their responsibility; the same cannot be said on EU energy security crises. For as long as Ukraine refuses to implement a transit consortium, bypass pipelines remain as the only medium term solution[33] (Stern 2009).

[33] The creation of a consortium of European, Russian and Ukrainian companies could operate the Ukrainian transit network and hence secure gas deliveries. Normally, EU companies would expect to have an equity position if they invest – this is a weak point of the recent EU-Ukraine Joint Declaration.

Graph 5. Natural gas: production and export, 2006-2009



Source: Federal State Statistics Service, IEF

As for the investments and future demand serious uncertainty leaves a lot of space for more studies and more realistic discussions. Cooperation with the EU and the USA normally includes fair treatment of basic interests: stability of demand, reducing price swings range. If we take the EU's 20-20-20 for granted and believe that it will be completed by 2020 in full, in this case we have to make a choice (before spending any money) for the Russian Energy Strategy for 2025. What we should take into account: official targets or economic forecasts? Or what should Russia do till 2020:

1. Invest for long-term contractual obligations for EU and domestic needs;
2. Invest for diversification of exports to the East;
3. Invest in the downstream and getting slowly out of crude oil;
4. Invest in EU energy security – both Nord and South Streams;
5. Invest – just in case – for the potential gas supply gap in the EU?

Nord Stream

Nord Stream (earlier North European gas pipeline) - gas pipeline, required to connect gas-transport system of Russia and Europe via the Baltic Sea bottom. Project was a favourite of the EU since the early 1990's, and it is enjoying the official support of the EU Commission. It was never seriously questioned before the start, particularly before 2006. Nord Stream gas should be delivered to the largest European consumers (Germany, Great Britain) passing the transit countries, with which Russia repeatedly had gas conflicts (Ukraine, Belarus, Poland). The second gas conflict with Ukraine became the reason of some deterioration of Gazprom reputation and possible acceleration of a natural gas delivery diversification to Europe. Undoubtedly that will negatively affect profitability of gas concern. Despite the fact that after the conflict Gazprom and Naftogazom have been concluded long-term (till 2020) contracts on delivery and gas transit, already Ukrainian side offers to reconsider agreements. Thus, the problem of Russian gas transit to Europe will be of current importance in intermediate and long-term prospect.

In order to mitigate the risk of reoccurrence of transit disputes one should build a pipeline directly to the main buyers of the Russian gas. The only option unique geographically admissible route of a new gas pipeline lies on a bottom of the Baltic Sea - is Nord Stream. The Nord Stream gas pipeline can be constructed only within the frame of large scale project (it can be called "Big Nord Stream"), divided into two stages:

1. Yuzhno-Russkoye field, a gas pipeline Grjazovets-Vyborg, the first stage of Nord Stream, gas pipeline OPAL.
2. The first phase of Shtokman development (or a gas field substitute), gas pipeline Murmansk-Volkhov (or a gas pipeline from a gas field substitute), the second stage of Nord Stream and gas pipeline NEL.

Nord Stream will have to pass through exclusive economic zones of Russia, Finland, Sweden, Denmark, and Germany. There is a possibility of route changing i.e. the pipeline may pass through the Estonian exclusive economic zone. The project has not yet received necessary building licenses from the origin parties on formal grounds. That is why project start-up has been postponed several times.

The operator of Nord Stream project is Nord Stream AG (Gazprom (51 %), E.ON Ruhrgas (20 %), Wintershall (20 %), N.V. Nederlandse Gasunie (9 %). Now Gaz de

France is considered as a potential shareholder. Total volumes of Nord Stream gas deliveries according to already concluded contracts (with E.ON Ruhrgas, Wintershall, Gaz de France, Dong Energy and Gazprom Marketing and Trading ltd.) are 20.5 bcm / annum.

Nord Stream has faced considerable criticism from public authorities of the Baltic States and the regional authorities (Åland Provincial Government 2007, Bornholms Regionskommune 2007), some research organisations (FOI 2007, SYKE 2007) and public organisations (Coalition Clean Baltic, 2007; Gotland Fishing Association, 2007). Their criticism is based on presence of considerable risks of the project which can lead to an essential damage for the stakeholders. On the other hand, project key stakeholders (shareholders of the project operator, the Russian and German governments) declare the absence of essential risks (Nord Stream 2006).

All risks involved in Nord Stream can be divided into 4 categories: economic, political, ecological and technological. Generally there are also legal risks, but they do not have essential influence on the project and consequently will not be considered. Besides, it is necessary to consider different character of risks at three stages of the project: co-ordination, construction and operation (the design stage is already passed). Therefore, it is necessary to analyse to what extent the Nord Stream project is threatened with the economic, political, ecological and technological risks arising at various project stages.

Having conducted project risk assessment for the purpose of this article, we examined two risk clusters:

1. Gas demand at the second stage of the project;

2. Gas supply for the second stage of the project;

Gas demand at the second stage of the project

Taking into account that delivery contracts have not been signed yet for the second stage of the project, its viability (including economic one) will be fully depend on gas demand fluctuations in Europe. The first branch is much steadier against this factor, because of the agreed long-term contracts for 20.5 bcm / annum. There is a possibility of gas demand reduction in comparison with currently forecasting volumes because of

the total European energy demand decrease due to economic recession (GDP of the EU will decrease on 1.8 % in 2009) and an increase of gas substitutes' share in primary energy consumption (PEC) i.e. coal, nuclear, and renewables (European Commission 2009). Besides, it is necessary to consider that the natural gas prices in Europe in 2004-2008 have grown approximately 2 times (Eurostat, 2007), as in long-term contracts they are linked to oil product prices, which in turn depend on oil quotations, as soon as oil prices start to grow, gas prices will do the same with a time-lag, that in turn will lower natural gas demand growth rate. According to Stern (2007), if the price for oil exceeds $ 30 / barrel with the gas price linked to oil, gas-based electricity generation development will be slowed down, and natural gas can be partially replaced from PEC by other energy resources.

At the moment European buyers are scaling back consumption of gas (gas consumption is 10% declining), driven by low GDP forecasts and tougher access to credit. The economic downturn in Europe has sapped the continent's demand and with the winter heating season now at an end, at the beginning of April Gazprom reduced its gas export forecast to Europe in 2009 by 30 bcm, from 170 bcm to 140 bcm (IHS Global Insight 2009). Coping with falling demand both domestic and abroad, Gazprom is taking defensive measures, including shutting down some production: Gazprom's gas production in February was down 15.3 % year-on-year, and in 2009 it is predicted to be 10% lower to 2008.

Germany and Great Britain are going to be the main Nord Stream gas consumers. However, German energy companies plan to build over 20 new coal-operating power stations, and the government may change its decision concerning building of nuclear power plants. Great Britain also can stop the process of nuclear power plants withdrawal. As a result it is hard to predict the robust gas demand growth at the core markets that essentially reduces Nord Stream gas deliveries potential.

According to Eurogas (2008), gas demand in Europe for 2015, which has not been covered by the contracts yet, is 50 bcm. From our point of view there are some obstacles for conclusion of new gas long-term contracts for the second stage of Nord Stream, especially the European Union tendency to further liberalisation of the gas market, e.g. increase of sport contracts share. Nevertheless, further gas market liberalisation, as a result of which the possibility of the new long-term contracts conclusion will be essentially limited, seems to be improbable.

At the end of April 2009, the EU plans to adopt “the third gas package” (the third gas directive and a number of accompanying documents) which will lead to essential increase of competition in the European gas market, and also can limit Gazprom activity in gas retail business, that will lower profitability of its sales.

Significant growth in competition at the European gas market will lead to demand decrease of Russian gas and price fall at the spot market, and also can affect the conditions for new or renewed long-term contracts. From 2007 to 2013 the capacities of LNG terminals in Europe will be almost doubled. We also can expect the substantial growth of gas deliveries from Algeria (by 67 % 2007- 2013) and Norway (by 39 %). Recent gas conflict with Ukraine pushed European governments and companies to increase a share of non-Russian gas exports. In particular, some German politicians have expressed views in favour of building LNG terminal in the country. The results of our risk assessment show, that there is high probability that the competition at the European gas market will considerably grow and will remain at such level for long time.

If Gazprom’s expectations on growth of European gas demand do not be justified or some political restrictions on the conclusion of new long-term contracts are applied, then even with the moderate competition at the market the volumes of gas deliveries through the second line of Nord Stream will be small concerning its projected capacity (7-10 bcm in comparison with projected 27.5 bcm). These deliveries will be mainly spot-based, that will increase income fluctuation for Gazprom (Protasov 2009).

Gazprom can redirect a part of its gas streams from the Ukrainian and Belarusian routes, but it will be much less profitable compared to new gas flows under new contracts. The gain from the redirection of gas streams will depend on the amount of transport tariff on Nord Stream, which will firstly go for covering of operational costs and fulfilment of credit obligations, and then for dividends of Nord Stream AG shareholders, including Gazprom.

Having calculated probabilities, we found that there is probability that there would not be sufficient demand in Europe for the second line of Nord Stream. Thus, the probability of an optimum outcome – conducting considerable gas export on long-term and on spot contracts - is estimated as very low. The expected outcome for the first risks cluster is that the gas export volume for the second stage will be low (7-10 bcm), and the prices fluctuations will increase.

Gas supply for the second stage of the project

Planned gas production on the Yuzhno-Russkoye field, a resource base for the first stage of Nord Stream, is going to be 25 bcm / annum that on 90 % covers the capacity of the first gas pipeline and exceeds existing contract volumes. These production volumes will be achieved in late 2009 (before the pipeline is operational) and can be available within 25 years that will provide sufficient volume of gas for the first line in long-term prospect. Hence, the probability of gas deliveries disruption for the first line should be estimated as very low.

However, risks for gas deliveries availability for the second stage of the project are essentially higher. Firstly, until now the resource base for it has not been clearly defined. The Shtokman gas field is considered to become the basic source for this. But in fact not only Shtokman, deposits of Yamal peninsula and Obsko-Tazovsky guba have been also included in this list. Besides, the second stage of Nord Stream can get gas from Russian Unified Gas System (Gazprom 2007), that is from any gas deposits attached to the pipeline network. Nevertheless, it sounds reasonable that first of all gas for the second line will come from Shtokman (the planned construction of Murmansk-Volkhov pipeline is the argument for it). If there is not enough gas for the pipeline from Shtokman, other above mentioned deposits will be connected to the project.

Shtokman gas for the needs of Nord Stream could happen in shortage in case of excess volume of the concluded long-term contracts over the production or in case of a delay with gas field being in operation. According to Shtokman's current plan, gas production at the first phase will be 23.7 bcm, and 11.9 bcm from which will be destined for Nord Stream that makes 43 % from a designed capacity of the second stage of pipeline project. Thus, even if Gazprom will succeed in concluding delivery contracts for the great volumes (as a reference point it is possible to use 20.5 bcm of conducted volumes at the first stage) and Shtokman will be on stream in time, the difference with planned production should be found from other sources (before introduction of the second phase of the project).

The second stage of Nord Stream and the first phase of the Shtokman development is supposed to be placed in operation in 2013. The beginning of gas production thus can be delayed because of technological and economic risks of the project. Difficult climate conditions (the deposit is located north of Polar Circle, it is 330 meters below the sea level, a drifting ice is present during the winter time), geological (a difficult pattern of the

bottom) and geographical (the length of underwater gas pipeline will be 635 km) conditions of the Shtokman project require application of new technological decisions (Mirzoev 2006). The technological risk has been decreased due to the joining the project by Norwegian company StatoilHydro, possessing considerable experience and technologies in the similar off-shore operations, especially in a shelf of northern seas.

Because of the world economic crisis (the project should be financed on 60 % by borrowed loans) and of the hydrocarbons prices fall investment capability of the company-operator will essentially decrease. Therefore there will not be sufficient funds to bring the gas field on stream in time. On the other hand, falling of the prices for metals and contractors services can reduce the project costs by 40 %.

However, if export deliveries begin in time and in sufficient volume, it is necessary to consider possibility of natural gas shortage at the internal Russian market. According to forecasts conducted in 2008, this shortage in intermediate term reaches 150 bcm, and the forecast of Minpromenergo assumed 27.7 and 46.6 bcm shortage by 2010 and 2015 respectively. The main risks, which can aggravate shortage of natural gas at internal market, are connected with a possible delay in opening of new major fields, insufficient increase of production by independent producers and decrease of imported gas from Turkmenistan.

Due to gas shortage the Russian authorities should make a choice between domestic and export deliveries. It is possible that due to social reasons or because of the Russian industrial lobby that the domestic market will first be supplied with gas, which may mean that there will not be enough gas for conducting the long-term contracts, including Nord Stream. Then in order to fulfil the agreements, Gazprom will have to buy more gas on spot market which may yield substantial losses. Considering Gazprom position in Russia and the last year's tendency to prioritise export deliveries, such scenario is improbable. Gazprom and the Russian Government will be trying to prevent any scenario causing gas shortage. It is very unlikely that gas for Nord Stream may be taken from the domestic market, since that would have a negative effect on the Russian economy.

So expected outcome for the second cluster of risks is delivery of gas for the second stage of the project from deposits of Yamal and the Obsko-Tazovsky guba (after Shtokman becomes operational deliveries will go basically from it), and also avoiding of

new long-term contracts for deliveries via Nord Stream (after getting information on a deposits extraction delay). The project will require serious mobilisation of Russian and European managerial, financial resources and technical skills. Once completed it would be soon used like all the other pipelines and debates on its future will go to historians.

Conclusions

Global recession with $ 50 per oil barrel is changing both: forecasts of gas consumption in the EU and capacity to invest in new technologies. There is a serious need for a better forecast for new investments - may be there is no "supply gap" in the EU in the future or quite to the contrary. Russia's long-term commercial interests go along with the needs of the EU energy security in its very strict meaning. "*Gazprom actually is prepared to provide highly expensive alternative pipelines to guarantee European gas security at its own (and its partners) expense*" (Stern 2009). Of course, it does not include any perception of "risk of Russia", which Russian side considers as politically motivated invention against Russian business. Nord Stream faces some difficulties, including the issues of demand for the second branch, and Shtokman is experiencing some delays. Economic crisis may lead to some delays, while the forecast for the EU demand is still an open issue.

Russia does not consider being in any energy conflict with the EU. If EU countries will fully delay or even prevent such pipelines from being built, then the responsibility is on the EU side. Energy Charter Treaty should not be ignored by EU countries as it happened in January 2009, and transit conflicts should be preferably dealt with collectively. For the next generation EU-Russia relations will have the strong gas ingredient, highly important for the EU's energy security, climate changes prevention and commerce.

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P&S Partnership&Success http://ru.ruseu.com/blog/energy/details_20.html

EU-Russian natural gas relations - Pipeline politics, mutual dependency, and the question of diversification

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Contents

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Abstract

The European Union is reliant on imported Russian natural gas. Certain EU policymakers consider Russia an unreliable, even dangerous energy supplier and are backing a project to bring gas from non-Russian sources to the EU via Turkey through the European Commission's flagship Nabucco pipeline. Others see the Russian Federation as a crucial and essentially reliable energy partner plagued by transit problems and have thrown their weight behind ventures to transport Russian gas directly to the EU via the Baltic and Black Seas – the Russian-sponsored Nord and South Stream pipelines. In performing a thorough analysis of the possible implications of reliance on Russian gas for the EU, this article argues that there are a number of important concerns which provide a powerful motivation for diversification ventures involving non-Russian sources. However, there are also several important mitigating factors which demand a more nuanced approach towards Russian supplies. Such an approach must incorporate both constructive engagement with Moscow and internal EU restructuring to promote energy solidarity and thus better withstand possible supply shocks.

Introduction

The European Union's energy security has been severely tested over the past year. August's Georgian conflict underlined the possible dangers of diversification into the post-Soviet space, with Russian bombs landing in the vicinity of several crucial gas and oil pipelines including South Caucasus and Baku-Supsa, while the Russian-Ukrainian gas conflict sent shivers across Europe in December and January. What initially appeared as the traditional annual bilateral disagreement swiftly degenerated into a veritable pan-European gas crisis, lasting nearly 20 days and forcing the shutdown of gas supplies to 18 European countries for almost two weeks. Thousands of households were left to face a particularly cold winter and European industry was seriously disrupted.

The crisis demonstrated that, in spite of the communications and papers regularly published on the subject by Brussels, the European Union's energy security with regards to natural gas continues to be precarious. Its inability to absorb supply shocks is due both to the nature of the gas trade and its inherent structural deficiencies. Unlike oil, natural gas is not a fungible commodity freely traded in a global market; instead, it is predominantly transported via pipelines, which restricts trade. The EU natural gas

market is therefore marked by a high degree of fragmentation, with member states' diverse energy markets insulated from each other and dominated by a few vertically-integrated companies. The lack of infrastructure interconnections inside the European Union constrains gas supplies and does not allow them to flow freely according to the market principles of supply and demand. Such a structure does not lend itself for energy solidarity in trying times. The pan-European gas crisis served to illustrate this point. Western European member states were, with minor exceptions, unable to provide their Central and Eastern European counterparts with emergency supplies during this cold winter. Neither did the interruption of natural gas affect them as much as their Eastern neighbours.

Such a balkanised energy structure does not provide a good basis for common energy interests. Unsurprisingly, the European Union has been unable to agree on a common external energy strategy. This is particularly the case when it comes to its main energy supplier: Russia. In the context of deteriorating political relations, the Caucasus war, and the Russian-Ukrainian gas conflict, many member states consider Russia an unreliable, even dangerous energy supplier and are backing a project to bring gas from non-Russian sources to the EU via Turkey through the European Commission's flagship Nabucco pipeline. Others, however, see the Russian Federation as a crucial and essentially reliable energy partner plagued by transit problems and have thrown their weight behind the Russian-sponsored Nord and South Stream pipelines. These alternatives link Russia and the EU directly via the Baltic and the Black Seas respectively and cut out transit countries such as Ukraine, currently responsible for transiting 80 % of the post-Soviet space's gas exports to the European Union, suggesting that these are the real culprits when it comes to interrupted gas supplies.

It is clear that the recent events in Georgia and Ukraine call for a comprehensive strategic assessment of the EU's energy security, particularly with regards to its external energy policy. Such an assessment, however, is far beyond the scope of this article. Instead, it focuses on the European Union's reliance on Russian gas imports and the security of Russia as a supplier. In illustrating the EU's natural gas security vis-à-vis Russia, it aims to show whether diversification away from Russia is truly necessary. If Russian supplies are in themselves secure then the debate surrounding diversification away from Russia is rendered superfluous, strengthening the case for the Nord and South Stream pipelines. If this is not the case, Nord and South Stream

would fail to tackle the root of the problem and it is necessary to investigate a viable alternative such as Nabucco.

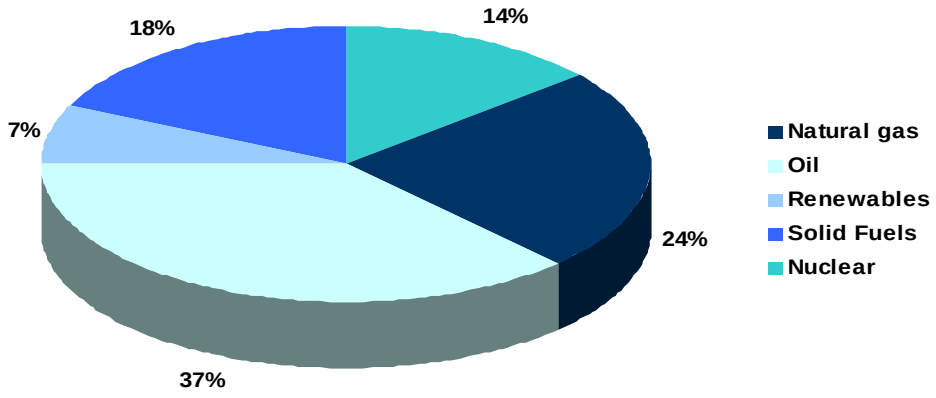
Any analysis addressing the EU's security vis-à-vis Russian gas imports must naturally consider the main threats and concerns with regards to Russian natural gas. As the European Union is faced with an increasing demand for natural gas it must first and foremost ensure that supplies are not only relatively reasonably priced, but are also sustainable. This includes ensuring that there is sufficient investment in new gas fields with a view to supplying EU demand. Security, however, clearly stretches beyond the mere parameters of supply and demand; the Russian-Ukrainian gas crisis is a clear case in point. As such, the potential economic and geopolitical leverage that Russia could exercise over the EU as a result of the latter's dependency must also be considered. In so doing, this article takes into account two principal Manichean debates that have emerged over the past decade, hindering thorough analysis of this topic: the debate on whether Russian energy policy is primarily driven by economic or by geopolitical factors, and the related question on the existence or otherwise of a certain 'mutual dependency' in EU-Russian energy relations.

The EU's natural gas supply

Natural gas is a strategic commodity for the European Union, occupying roughly 25 % of its primary energy mix. However, the EU's indigenous gas supplies are in fact extremely limited. The EU possesses a mere 1.6 % of the world's proven natural gas reserves, and in 2007 EU domestic gas production was estimated at only 6.5 % of the global share.[35]

[35] *BP Statistical Review of World Energy*, BP, June 2008.

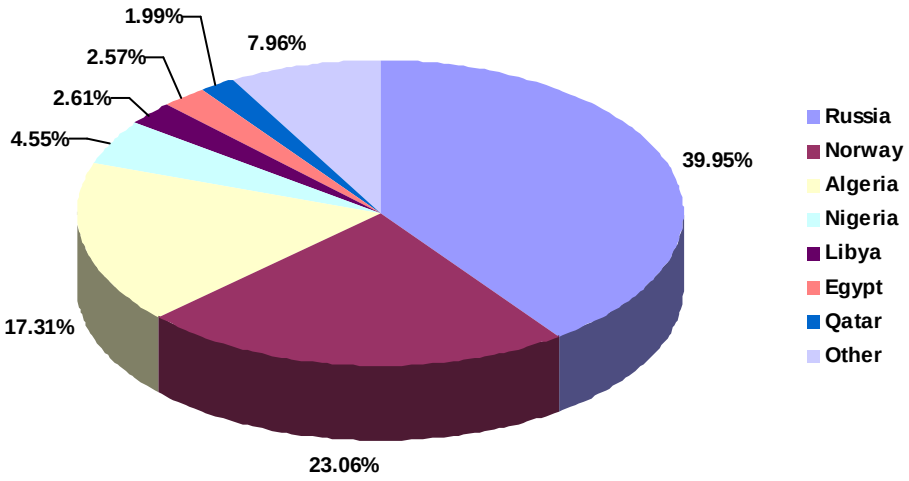
Figure 1. EU gross inland consumption, 2006 (energy mix)



Source: 'Europe's current and future energy position', *Second Strategic Energy Review*, European Commission, 2008.

It is unsurprising, therefore, that indigenous production is unable to meet the EU's gas needs. With only 40 % of the EU's gas provided by domestic suppliers, the European Union relies to a large extent on imports (60 %) to satisfy its domestic consumption. Russia is by far the EU's primary import supplier. The Russian Federation is the source of roughly 40 % of all imported gas, followed by Norway and Algeria with a share of 23 and 17 % respectively. The remaining gas supplies are primarily met by Nigeria, Egypt, Libya and Qatar.

Figure 2. EU imports of natural gas, 2006



Source: Eurostat, 2006

Under a 'business as usual scenario'[36], the EU's natural gas consumption is bound to increase. Investments in power generation through combined cycle gas turbine technology (CCGT) driven by relatively low capital costs and lower carbon dioxide emissions, in addition to strong environmental policies limiting the usage of coal and the phasing out of nuclear energy in countries such as Germany, are leading to what energy expert Dieter Helm has labelled a 'dash for gas'. The International Energy Agency (IEA) estimated in 2006 that the European Union's natural gas consumption will rise from an estimated 560 billion cubic meters (bcm) in 2010 to 726 bcm by 2030[37]. Steadily declining EU domestic production levels[38], coupled with increasing internal demand, will naturally increase the European Union's need for imports.[39] The European Commission has estimated that the level of import dependency for natural gas among the EU27 will increase from 60 % today to 84 % by 2030.[40]

The combined gas reserves of the EU's two other major gas suppliers, Norway (roughly 3 trillion cubic meters i.e. tcm) and Algeria (4.52 tcm), pale in comparison to the 44.65 tcm held by the Russian Federation[41], This, combined with a preference for long-term stable revenue over short-term price competition with Russia by Norway in particular, makes it most likely that such an increase in imports would be filled with Russian gas.

The growing need for natural gas imports and the subsequent increase in importance of Russian supplies, however, merits several key considerations: What are the potential risks associated with an increasing dependence on imports from Russia? Will Russia indeed be able to satisfy the European Union's increasing gas demand? And is European dependence on Russian gas politically and economically advantageous? In order to answer these questions it is imperative to understand the recent changes surrounding Russia's energy sector.

[36] The extent to which the current financial and economic crisis will affect the EU's energy consumption remains unclear.
[37] *World Energy Outlook*, International Energy Agency, 2006.
[38] EU domestic gas production fell by 6.5 % from 2006 to 2007. The EU's gas reserves are estimated to secure less than 15 years of domestic production. 'Europe's current and future energy position', Second Strategic Energy Review, Communication from the European Commission (COM 2008 – 781 final):
http://ec.europa.eu/energy/strategies/2008/doc/2008_11_ser2/strategic_energy_review_wd_future_position2.pdf
[39] *BP Statistical Review of World Energy*, BP, June 2008.
[40] 'An Energy Policy for Europe', Communication from the European Commission, 2007, see: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0001:FIN:EN:PDF
[41] *BP Statistical Review of World Energy*, BP, June 2008.

Russian energy policy

Domestic energy policy and a potential supply gap

With the accession of Vladimir Putin to the Russian presidency at the end of 1999, Russian energy policy underwent a significant transformation. Boris Yeltsin's political fortune had been contingent on the support of oligarchs who provided him with the necessary backing to remain in power and secure elections, particularly the presidential election of 1996.[42] Putin understood very well the political constraints that had plagued his predecessor and made it a key priority to subdue those factors that could limit his exercise of power. The emigration (in the lucky cases) of individuals such as Boris Berezovsky and Vladimir Gusinsky was the result. Naturally, the oligarch-controlled energy sector, a cornerstone of the Russian economy, was not left unscathed. Mikhail Khodorkovsky, CEO of major oil company Yukos, was charged with tax evasion and imprisoned. Yukos' assets were stripped and ended up under state control, and the company was declared bankrupt in 2006.

Putin clearly understood that controlling natural resources translates into power; especially in a country where natural resources provide the state with a substantial share of its revenue, and thus sought to wrest control of the energy sector from a handful of oligarchs back into state hands. This does not come as a grand revelation: Putin's doctoral thesis stressed that Russia's natural resources and their revenue-generation should be under state control and serve as the basis for restoring the Russian state, its economy, military, and ultimately its pride.[43]

As such, the Kremlin effectively consolidated control over the natural gas and pipeline business. In 2002, Putin halted a proposal made by German Gref, Economics Minister at the time, to privatise Gazprom, instead stating that Gazprom would firmly remain in state hands.[44] This was particularly done since the state champion's control over the Russian gas pipeline system translated into an export monopoly, providing significant leverage against independent companies and even countries, such as the Central

[42] Helm, Dieter. 'The Russian dimension and Europe's external energy policy', 3 September 2007. See: http://www.dieterhelm.co.uk
[43] Olcott, Martha. 'The Energy Dimension in Russian Global Strategy: Vladimir Putin and the Geopolitics of Oil', paper published by the James A. Baker III Institute for Public Policy of Rice University, October 2004.
See: http://www.rice.edu/energy/publications/docs/PEC_Olcott_10_2004.pdf
[44] 'Nemcy doshli do Urala' ('Germans have reached Urals'), *Argumenty i fakty*, No.42 (1199), 15 October 2003.

Asian republics, that rely on Gazprom's goodwill to transmit their resources through Russia's pipelines. Russia's non-ratification of the 1994 Energy Charter Treaty (ECT) also strengthened this control since the transit protocol of the ECT would have granted third-party access to these pipelines.

As energy prices started to increase in the early 2000's, the Kremlin continued using legal grounds to force state acquisition, particularly in relation to Russian oil and gas fields. Shell was forced to cede part of its stake in the Sakhalin II field to Gazprom after environmental concerns were raised to complicate the development of the field, while TNK-BP had to relinquish its control of the Kovykta field as it could not meet its licence conditions on the production of gas, especially since Gazprom, through its monopoly over pipelines, inhibited the company's transmission capacity. In April 2008 Russia also promulgated a new federal law on 'Foreign Investments in Companies Having Strategic Importance for State Security and Defence' (No.57-FZ), which significantly limits foreign ownership of companies in strategic sectors, including the extractive industries.[45]

It is therefore clear that Moscow effectively strengthened its grip over the oil and gas fields through Gazprom and Rosneft reducing foreign companies to the role of junior partners and technology-providers.

One significant side effect to this policy, however, has been a lack of investment in new Russian gas fields. Coupled with the simultaneous decline of the super giant fields in the Nadym Pur Taz (NPT) region, Russian gas production is facing an uphill struggle. According to the International Energy Agency, there are 'doubts about whether Russia will be able to raise production capacity fast enough to even maintain current export levels to Europe'.[46] While Gazprom has cemented control over the natural gas sector, discouraging foreign investments in new fields, it has simultaneously failed to fill the void and invest sufficiently in that sector.

The current financial and economic crisis, together with low oil prices and reduced bank lending, has enhanced this trend. Not only is Gazprom weighed down with some $ 50 billion in foreign debt and a sharply reduced share price, but its projected revenue

[45] It is important to note that the consolidation of the oil and gas sector under state control was indeed a global trend coined 'resource nationalism' and was therefore not only exclusive to Russia.
[46] *World Energy Outlook*, International Energy Agency, 2006, p.111

is expected to significantly decline in line with current oil prices. Experts estimate that Gazprom's 2009 revenue might drop by 26 % in relation to 2008.[47] Lack of financial resources are therefore aggravating planned investments in new production fields, which are significantly more expensive yet desperately needed due to years of underdevelopment. Gazprom's super giant Shtokman field, which holds 3.8 tcm, for example, will only be economically viable at oil prices of roughly $ 60/barrel. In addition, 70 % of the financing will need to be bank-funded according to the CEO of Gazprom's Shtokman Development, Yuri Komarov. Even Gazprom acknowledges that production figures for 2009 might be 10 % lower than in 2008.[48]

As such, Russia's ability to meet the EU's increasing natural gas demand is highly questionable, particularly in the context of Russia's growing domestic gas consumption. Even if Russia aims to free up more gas by increasing coal use and buying large amounts of gas from Central Asia, Russian supplies might still fall short of what is required under a BAU scenario according to several energy experts.[49]

While it is true that the current financial and economic crisis is also reducing gas consumption and therefore closing some of the short-term supply shortfalls, the long-term effect will be detrimental. Natural gas consumption is destined to increase and with long lead times for new complicated gas fields to come on-line, lack of investments now will create a significant supply gap in the future, which might lead to another run on oil and gas prices as witnessed in 2008.

Such a potential deficit, however, is not the only concern surrounding Russian gas supply for the European Union. Moscow is also clearly using its leading position as an energy supplier to advance not only its economic but also its political interests. This could have a considerable impact on the European Union.

Foreign energy policy: Geopolitics and economics

While the Yeltsin era witnessed the entry of business into politics, the pendulum swung back under Putin. It would therefore be naïve to assume that Russia's energy policy is

[47] 'The Gazprom Downturn', *Barents Observer* (www.barentsobserver.com),17 February 2009.
[48] *Ibid.*
[49] See: Milov, Vladimir. *Russia and the West: The Energy Factor*. Center for Strategic and International Studies, August 2008; Riley, Alan. 'The Coming of the Russian Gas Deficit: Consequences and Solutions', Centre for European Policy Studies, October 2006.

driven by economic factors alone. This is clearly spelled out in Russia's energy strategy, which emphasises the need to strengthen its market position and maximise export possibilities while also using natural gas supplies to secure Russia's political interests in Europe and its neighbouring countries. According to Michael Fredholm, a defence analyst working for the Swedish government, the Energy Strategy even uses language 'reminiscent of military strategy: the state must support the Russian companies in the struggle for resources and markets'.[50] Under the Kremlin's logic this also means by extension that Russian companies must support the state in the struggle for political interests and influence.

In fact, economics and politics are intertwined and often even complementary in Russian energy policy. Insulating energy markets in Central Asia by buying up resources and controlling export infrastructure, for example, not only has a clear economic advantage but it also brings political leverage as these countries become (even more) dependent on Russia as an export market. Similarly in the European Union, countries that have a high share of Russian gas imports are simultaneously those that maintain good relations with Moscow – Germany and Italy, for example.[51]

The economic-political tandem of Russian foreign energy policy was particularly evident during the latest Russian-Ukrainian gas crisis. In the context of the global economic downturn, financial difficulties effectively threw a spanner into Gazprom's costly pipeline ventures. The construction of the Altai pipeline to China was halted and Prime Minister Putin even questioned the viability of the Nord Stream pipeline. This put increasing pressure on Gazprom's strategic ambition to bypass Ukraine via pipelines such as Nord and South Stream. The economic rationale behind this conflict was therefore considerably strong. Not only did Moscow want to lock Kiev into a lucrative contract before gas prices started dropping, particularly in light of the fact that Russia had already agreed to pay higher prices for Central Asian gas, but it also sought to control Ukraine's pipeline network from an economic perspective as it would reduce the need for costly diversification plans.

[50] *Energeticheskaya Strategiya*, p.42-43, cited in Fredholm, Michael. 'The Russian Energy Strategy & Energy Policy: Pipeline Diplomacy or Mutual Dependence?' Conflict Studies Research Centre, September 2005.
[51] The Baltic States are an exception due to the historical context. Bulgaria also fits into the example of Germany and Italy.

This gas clash, however, was as much about geopolitics and Ukrainian institutional infighting as about achieving a good rate of return. Taking place in the aftermath of the war in Georgia, the conflict also had a distinct geopolitical dimension. Russia continued its push to rout Western influence in what it considers its rightful zone of 'privileged interest', discrediting Ukraine as a liability, and emphasising to the European Union (as with Georgia) that true energy security lies with Russia alone via direct pipelines. While Russia's reputation as a supplier did also suffer, the Kremlin's public relations effort was much more co-ordinated this time around, which arguably softened the blow to its image. More importantly, however, Moscow wished to turn the delicate balance of power between both countries in its favour. Ukraine's ability to turn off the gas tap is one of the few important tools that can potentially keep Russian policy in check. Russia therefore seeks to curtail Ukraine's gas leverage or control its transit system either by directly acquiring a stake or circumventing the Ukrainian corridor through its other planned pipelines. This would therefore not only increase Russia's economic position but simultaneously gives it more political leverage.

It can therefore be clearly seen that economic and political factors are intertwined in Russian energy policy. This policy aims to maximise income, strengthen Russia's market position by penetrating and insulating markets and keeping an export monopoly, effectively controlling the whole value chain, while simultaneously increasing political leverage and promoting its interests abroad. Such a strategy is entirely rational and should not invite value judgements. It would be unrealistic to expect Russia to not maximise the economic benefits energy resources can deliver and foolish for Russia to not make use of its energy supplies to attain political influence, particularly as this is one of the strongest levers at its disposal.

Bearing this in mind, the European Union should treat Russian energy policy and supply with extreme caution for several reasons. From an economic point of view, Russian dominance over the EU's natural gas market is undesirable as it restricts competition and could provide Russia with a price-setting monopoly. Such a concern is not entirely unrealistic when seen in the context of Russia's interest in establishing an OPEC equivalent for natural gas and Prime Minister Putin's suggestion to de-link natural gas from oil prices, claiming that 'the era of cheap gas is of course coming to

an end'.[52] Politically, increasing dependence on Russian imports would also be disadvantageous as it could provide Russia with political leverage inside the European Union. Assuming that Russia would not make use of this political lever is naïve, particularly when considering that Russian officials have recently stated that the risk of gas supply disruptions would rise if Russian interests were ignored.[53]

Mutual dependency?

Many analysts, however, have downplayed the potential political influence Russia could wield as a result of the EU's gas dependency, claiming that the EU-Russian energy relationship is defined by mutual dependency.[54] This concept rightly states that the European Union is as dependent on natural gas from Russia as the Russian Federation is on the revenue that is generated by selling its gas. In 2002, for example, energy accounted for 55 % of Russian export revenues, almost 20 % of GDP and roughly 40 % of tax revenues[55], while Russian natural gas currently represents 40 % of all EU gas imports. This idea of mutual dependency has lead many to believe in some kind of inherent stability in EU-Russian energy relations, suggesting that Russia, for example, would be disinclined to use energy as a tool against the EU fearing the possible financial repercussions.

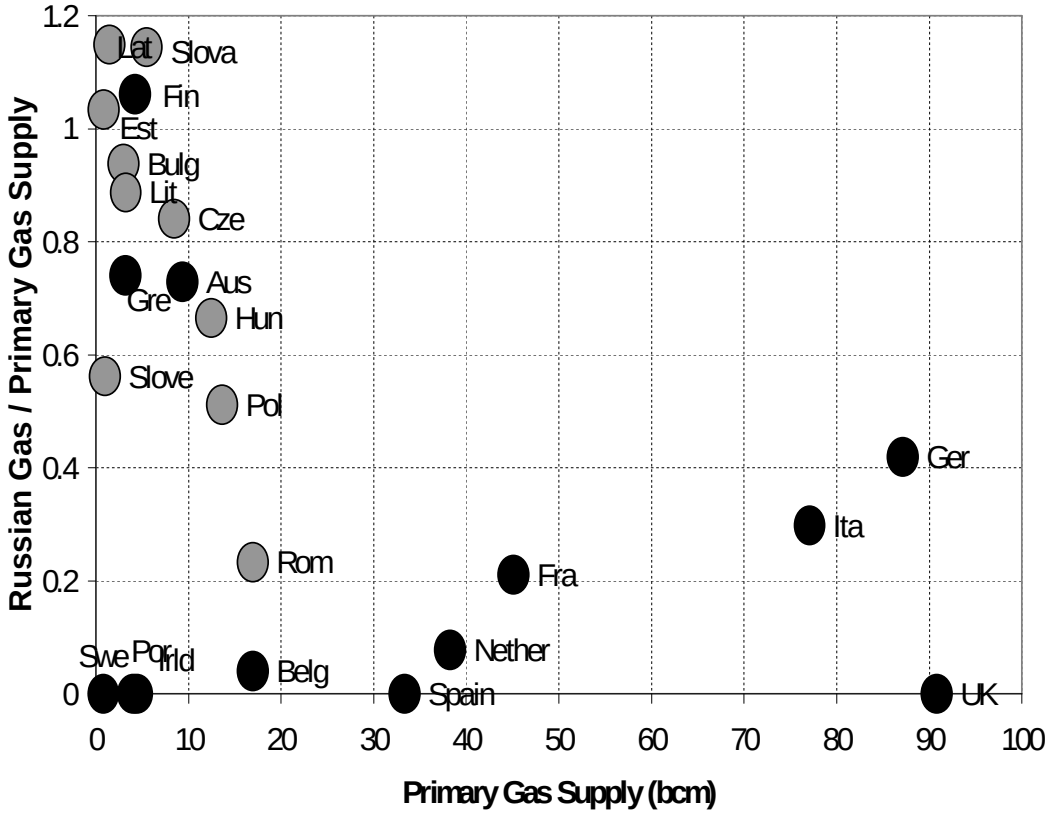
Assuming such stability in EU-Russian energy relations neglects some of the finer complexities of the EU-Russia relationship and, in so doing, invites a worrying degree of complacency.

When it comes to energy relations, the European Union can hardly be considered a monolith. As such, while mutual dependency might be the case in the event that the EU was able to function as a single actor, it certainly is not at a member state level. This is particularly the case for the EU's Central and Eastern European member states, which consume relatively little natural gas – only around 14 % of the EU's total natural

[52] 'Putin says "cheap gas era" ending', BBC World News, 23 December 2008. See: http://news.bbc.co.uk/2/hi/europe/7796806.stm; and 'Putin contradicts market: gas price will rise', The Guardian Online, 23 December 2008.
See: http://www.guardian.co.uk/business/2008/dec/23/putin-gas-exporting-countries-forum
[53] 'Kiev rebuked for soliciting EU help', *Financial Times*, 25 March 2009.
[54] Goldthau, Andreas. 'Resurgent Russia? Rethinking Energy Inc.', *Policy Review*, No 147, February/March 2008, Stanford University; Borko, Yuri. *Ot Evropeickoi Idei – K Edinoi Evrope* (From a European Idea to a United Europe), Moskva: Delovaya Literatura, 2003;

gas consumption.[56] As such, the revenue Russia makes by selling gas to these states is limited. Nevertheless, Russian gas provides the majority share in these countries' primary gas supply. This became painfully clear during the Ukrainian-Russian gas crisis in January 2009 when the dispute left many Eastern European countries out in the cold. The Baltic States, Slovakia and Bulgaria, for example, rely almost entirely on Russian gas imports to meet their gas needs, with all new member states using imports from Russia to cover at least 60 % of their gas consumption.

Figure 3. Russian gas as a share of primary gas supply / total amount of primary gas supply (bcm)



Source: Presentation 'Russian Gas in Europe', Pierre Noel, University of Cambridge, 2008

As such, mutual dependency cannot be seen to exist between Russia and these member states. While some analysts would argue that the EU provides these member states with the requisite protection against Russia using its energy position, this is

[55] 'Russia Country Analysis Brief', Energy Information Administration, cited in Debra Johnson, 'EU-Russian Energy Links: A Marriage of Convenience?' *Government and Opposition*, Vol.40, No.2, Spring 2005
[56] Calculated using BP's Statistical Review of World Energy.

rather far-fetched. The European Union has been enormously divided on the issue of energy security, with member states resorting to their own national policies and interests. It is therefore questionable whether the European Union would indeed rally to an individual member state's aid in the case of an ambivalent and arbitrary shutdown of energy supplies, particularly when large gas consumers such as Germany and Italy would not want to jeopardise their own business relations with Russia.

In addition, mutual dependency is contingent on a common perception of this dependency. For it to ensure stability, both actors have to believe in their shared vulnerability to the same degree. It assumes that neither actor would damage the interests of the other as such actions would inadvertently also have detrimental effects on themselves. It would be a fundamental mistake to impose such a limited rationality on the Russian Federation. Russian thinking goes beyond viewing conflict in energy relations as a mere lose-lose situation by considering who actually stands to lose more. In this vein, the key question to ask is Lenin's eternal *kto-kogo* (who-whom): Who depends on whom more? Do the means and possible adverse effects justify the ends? This is not to say that Moscow will sooner or later turn off the gas tap to EU customers. What it does signify, however, is that the issue of mutual dependency is far more complex than oftentimes assumed and that the EU needs to be aware of its limitations. There are clear concerns surrounding Russian natural gas imports and the European Union must treat the issue of its import dependency seriously. It must ask the questions Moscow is posing itself, and prepare itself for any scenario, instead of placing its faith in the misguided belief that mutual dependency will provide stability. So far, it has provided little more than complacency and lethargy.

Conclusion

It is never a good time to draw conclusions in the midst of a financial and economic crisis that shakes the very foundations of an economic model. This is particularly the case when using natural gas supply and demand projections. Nevertheless, while it is true that the current crisis will undoubtedly reduce energy consumption, it also complicates investments in new oil and gas fields, the latter of which will be sorely needed in due time if we are to avoid stagnating production coupled with a new increase in demand, which could lead to another run on oil prices and a potential gas supply gap.

This article has highlighted such a development particularly with regards to Russia. It is unclear whether Gazprom will indeed be able to satisfy Europe's future gas demand. On the other hand, it has demonstrated that Russian energy policy is actively geared towards extending its economic and political influence. This is only natural. It would be foolish for Moscow to not make full use of its national advantages.

In this vein, the European Union must treat Russian energy policy and its dependency on Russian imports seriously. This means diversifying away from Russia through the Nabucco pipeline and the expansion of liquefied natural gas (LNG). A serious push for renewable energy and energy efficiency, particularly in the context of the dual climate and economic crisis, would also be needed alongside investments in carbon capture and storage (CCS).

These options, however, do not come without their own problems. The Nabucco pipeline continues to face a lack of political will due to its potential shortcomings[57], LNG is expensive and does not secure gas in itself but secures the ability to compete for global LNG supplies, and CCS as well as renewable energy will not be able to substitute natural gas in the short to medium-term.

Russia is and will continue to play a major role in the European Union's natural gas supply, and will therefore have to be engaged constructively. Promoting energy efficiency, which according to the European Bank for Reconstruction and Development could save Russia 40 % of its annual energy consumption, could be one successful soft policy tool to free up the natural gas that is locked in Russia's Soviet-era infrastructure. This is particularly the case as energy efficiency, under the right mechanisms, is a win-win situation that would not confront Russian sensitivities surrounding natural resources. Russian pipeline projects such as Nord and South Stream can therefore also be valuable in as much as they could provide more gas supplies or rather limit interruption by transit countries. Nevertheless, these pipelines must be viewed in the light of Russian economic and political interests and therefore be approached with caution. A clear economic/political cost-benefit analysis must be done with all these projects in order to take all the different factors into account. This would

[57] These include concerns surrounding where the gas will come from and transit countries as the Caucasus War demonstrated Georgia's precariousness and Turkey has been using its transit country status to push for the opening of the energy chapter in its negotiations with the Commission.

help the EU to determine whether indeed such pipelines are important and whether it is worth undertaking them in light of the possible associated risks.

One of the most worrying aspects surrounding Russian energy supplies, however, is the fact that it has divided the European Union. The mismatch of a fragmented EU facing an overly confident Russia willing to make full use of its energy wealth has reinforced this tendency. In the EU it has allowed rationality to give way to hysteria and national egos on one hand, and complacency and lethargy, due to a mistaken believe in stability through mutual dependency, on the other.

In this context, a balanced, more nuanced approach towards the Russian Federation is needed that both acknowledges Russia's importance as a key energy supplier and recognises the inherent risks associated with it. This means engaging Russia constructively to iron out our differences while simultaneously spreading our external risk via diversification and increasing our internal capacity to absorb supply shocks and provide energy solidarity. The latter is of particular strategic significance. Only by strengthening the European Union's internal structures through an interconnected market will the EU start acting as a common bloc; maybe more importantly, however, it will be able to check some of the Russian national advantages without confronting them head-on.

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The EU needs a common energy policy - not separate solutions by its member states

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Contents

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Introduction: to construct Nord Stream or not?

The arguments concerning Nord Stream vary greatly between the EU member states, existing transit countries (Belarus and Ukraine), Russia, and the countries not directly involved in the pipeline (particularly Norway, Central Asian states and countries involved in the plans related to South Stream and Nabucco). There are no commonly accepted arguments either in favour or against Nord Stream.

Despite such an embedded ground, one can name at least the following arguments which have been presented in favour of the pipeline. To begin with, the EU's gas consumption is estimated to grow in the future, and therefore, it seems logical to import more gas from Russia, which possesses a quarter of the world's natural gas reserves. Following this line of thought, should the natural gas volumes from Russia to the EU grow, new pipelines need to be constructed, since the existing pipelines are not enough for all planned gas and liquefied natural gas (LNG) is not a serious option, at least for time being[59]. In addition, the reliability of the transit countries, particularly Belarus and Ukraine, has been questioned, implying that pipelines bypassing transit countries would be a more secure alternative for gas shipments than pipelines going through ex-Soviet transit countries. Thirdly, it has been suggested that the direct pipelines from Russia to the EU integrate Russia towards the EU, since they strengthen the interdependence between the parties. Fourthly, it has been claimed that undersea pipelines are less easy to be sabotaged than those built on the ground, referring especially to those pipelines which are planned to go through the Caucasus or the Middle East.

Correspondingly, the following arguments have been used against the pipeline. The direct pipes do not support European integration since they neglect the interest of the countries-in-between. It has been said that the direct pipelines divide the EU, as the large EU countries involved would neglect the Union as a foreign policy actor and start to strengthen their bilateral relations with Russia. In fact, Nord Stream has even been compared to the gas version of the Molotov-Ribbentrop Pact or another iron curtain (Watson, 2008; Argus, 2009b). Furthermore, it has been argued that the undersea

[59] In mid-February 2009, Russia opened its first LNG plant in Sakhalin (IHT, 2009a). When the plant reaches its full capacity in 2030, it will chill and ship around 5 % of the world's LNG supply i.e. 90 million tonnes of LNG. Now, the installed capacity is some 10 million tonnes (EIU, 2009). According to IEA (2008b), Russia's LNG capacity is expected to remain rather insignificant, i.e. just 13 bcm in 2015. In this context, one should not neglect the plans of Siemens to become Gazprom's strategic partners in LNG sphere, particularly in the Shtokman field (Itar-Tass, 2009a).

pipelines would be more expensive to be erected than ground pipelines[60]. In addition, it has been stated that the corrosion of the pipeline on the bottom of the sea would be faster and its possible repair would be more difficult to handle than on the ground. Environmental issues have also been presented against the pipeline, implying that the construction of the pipeline would release toxic waste, and dislodge underwater explosives and chemical weapons dropped to the bottom of the sea after WWII. Military issues have also appeared in the arguments against the pipeline, indicating that the Russian Navy would become more active in the region[61], thus disrupting the military balance of the Baltic Sea region. It has also been argued that the pipeline and its maintenance would facilitate espionage. Last but not least, some experts have started to suggest that the interdependence between the EU and Russia is a myth, which would not hold if the EU-Russia relations start to cool down.

Almost any criteria presented, either in favour or against the pipeline, can be challenged, and hence, one should not evaluate the situation by looking through a pipe but should have a broader perspective on the issue. In order to find an answer whether or not to construct Nord Stream, this article tries to develop the EU's external supply security with five interconnected actions: (1) save energy = improve energy efficiency; (2) increase own energy production = decrease import dependency; (3) diversify external energy sources = lower dependency on any external gas supplier; (4) store and share = prepare for non-delivery; and (5) develop sustainable relations with the largest external energy supplier = create a reliable partnership with Russia. In the following the aforementioned issues will be discussed in greater detail.

[60] "*Considering the length of Nord Stream (roughly 750 miles) and the difficulties of the Black Sea (most of South Stream would lie in water more than 1 mile deep), these projects, if completed, would be among the most expensive pieces of petroleum [natural gas] transport infrastructure in the world. But Gazprom is not interested in these projects because they are sound, cost-effective investments (they clearly are not), but because of the political leverage the lines would create. Pipelines that bypass existing transit states such as Poland and Belarus would allow Russia to supply core Europe directly, granting Russia the ability to turn off supplies to individual states - most notably Germany and Ukraine - without endangering supplies to other states.*" (Stratfor, 2007).

Save energy = improve energy efficiency

Without decisive pro-nuclear energy measures the EU's own energy production declines, which means that we are forced to import more energy (to become more dependent on external sources), unless we are able to reduce our own energy consumption. Energy saving does not necessarily result in lower economic wellbeing, if we are able to rationalise our energy consumption. The majority of the EU member states are able to reduce their energy consumption with relatively reasonable investments. I believe that the best return on energy savings investment can be achieved in Eastern and Southern Europe and changing the energy consumption patterns of households everywhere in the EU.

The EU would require an executable energy saving programme in order not to become overwhelmingly dependent on imported energy. The programme should not only be based on increasing the awareness of EU citizens (i.e. Intelligent Energy - Europe Programme), but on substantial rewards and sanctions for households and enterprises. However, before that is possible the EU needs a common energy policy.

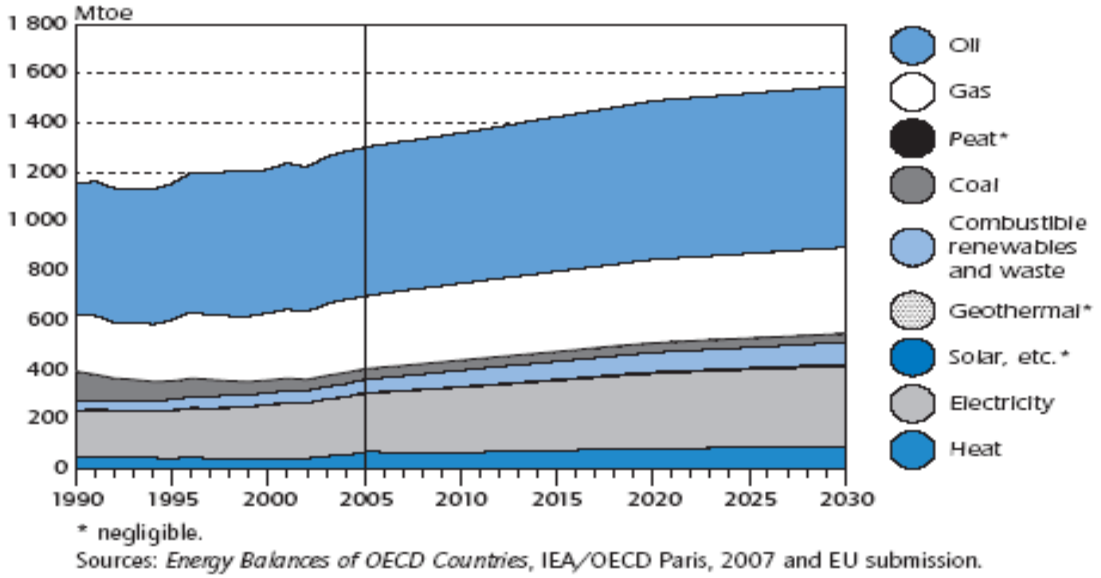
The EU's net energy imports have grown significantly since the year 1990 and now stand at 51 % of total primary energy supply. The EU's net import share is clearly higher than in the OECD in general (31 %). If the current trend continues, the EU's import dependency jumps by 2030. Therefore, one may ask, is it safe to build the future of 500 million EU citizens on an external energy supply (IEA, 2008a)[62].

Even if the EU aims at saving energy, the current trend suggests that the Union's energy consumption increases by more than 10 % during the period 2005-2030 (Table 1). Though the consequences of the international financial crisis reduce the growth pressures in the medium-term, in the longer run the EU cannot escape from the vicious circle of external dependency, unless it starts a serious energy saving programme and starts to invest more in its own energy production.

[61] Österlund (2009) aptly writes that "*the frequency of sailing of Russian Navy surface vessels and certainly also submarines will increase in the Exclusive Economic Zone of Finland in connection with the protection of the pipeline.*"

[62] I believe that the Russian Government would not accept that Russia would be as highly dependent on external energy supplies as the EU is.

Table 1. The total energy consumption of the EU, 1990-2030



Source: IEA, 2008a

Increase own energy production = decrease import dependency

While the EU's energy consumption is predicted to increase by clearly over 10 % by 2030, the Union's energy production will decrease by approximately 20 % during the same period (IEA, 2008a). Even if energy production with wind, solar, and combustible renewables is to multiply, the aforementioned energy sources cannot compensate for the production fall of the four energy pillars of the EU i.e. the drop of nuclear energy by 12 %, coal by 36 %, gas by 55 %, and oil by 69 % during the following two decades. In this context, one should keep in mind that the aforementioned four energy pillars account for some 85 % of the EU's current energy production and over 90 % of our primary energy consumption (Appendix 1 and 2).

Since the EU does not have significant hydrocarbon resources and we are forced to reduce the consumption of coal to meet the goals of the Kyoto Protocol, we have only one domestic pillar left, i.e. nuclear power. I argue that the EU should increase nuclear energy production significantly, if it does not want to become too dependent on imported energy. The energy supply security of the EU can be achieved only when nuclear power would cover more than natural gas in the EU's primary energy consumption. Currently, nuclear power accounts for some 14 % of the Union's primary energy consumption, whereas natural gas is 25 %. The current trend does not promise

too bright a future for the next generation, who will be forced to become an international energy beggar, unless we start to take serious actions now (Appendix 1).

The number of nuclear power stations should multiply, if the EU does not want to be led by external energy providers[63]. This means that the energy policy of the EU's large member states should become more favourable towards nuclear energy. At the moment, the share of nuclear energy in primary energy consumption is 39% in France, 10 % in Germany, 0 % in Italy, and 7 % in the United Kingdom. It seems that unless the aforementioned countries make their energy consumption more dependent on nuclear power than on natural gas i.e. the share of gas in the primary energy consumption is 15 % in France, 24 % in Germany, 39 % in Italy, and 38 % in the United Kingdom. As only the United Kingdom has any independent gas production worth mentioning among the aforementioned group of countries, it is obvious that a relatively insignificant role of nuclear energy in the German energy policy and the total absence in the Italian policy increases the EU's dependency on imported gas (Appendix 1 and 8).

Although the United Kingdom is a significant producer of natural gas within the EU, one should not be lulled by an illusion that it has significant natural gas reserves. The proven natural gas reserves will last only about six years at the current production rate. As the EU possesses only a couple of percent of the world's natural gas reserves while consuming a fifth of the global natural gas production, it is clear that building our energy policy on natural gas means giving our future into foreign hands.

To conclude, one should not forget that the EU's own natural gas production will inevitably drop significantly in the following two decades. Today, the EU is able to cover 43 % of our natural gas consumption. In 2030, the share is just 16 %. The situation with oil is much worse (Appendix 3).

[63] Although the EU would erect a significant number of new nuclear power stations, it cannot totally avoid any external dependency, since the Union is almost completely dependent on imported uranium. The EU can produce only 2 % of the uranium it consumes. Four countries, namely Canada (24 %), Russia (19 %), Niger (16 %), and Australia (14 %), take care of nearly three quarters of the EU's uranium supply (IEA, 2008a). On the other hand, their uranium import dependency is less risky than hydrocarbon dependency since the EU can store the uranium to meet its needs for several years, whereas the storage capacity for oil and natural gas is rather insignificant.

Diversify external energy sources = lower dependency on any external gas supplier

Nowadays, Russia covers 24 % of the Union's natural gas consumption, being clearly the most important external gas source. Russia's share is equivalent to the combined stake of two next largest external gas suppliers, namely Norway and Algeria. Should the EU member states build their future on natural gas, it seems evident that the role of Russia in the Union's gas supply will increase, since Russia's gas reserves are by far the largest on the earth, around a quarter. It is wise to keep in mind that Russia's gas reserves are comparable to two next largest reserve holders, Iran and Qatar, together (Appendix 3, 4, 5, and 8).

Higher gas consumption in Europe means more gas transport to Europe i.e. more pipeline deliveries or LNG shipments. The EU's total pipeline entry capacity is about 310 bcm. In addition to the pipelines, the EU has 14 LNG terminals in operation or under construction with a total capacity of around 115 bcm. Only small additions in LNG capacity, apart from those already under construction or approved, are expected in the EU27 by 2015, when the capacity is expected to be around 120 bcm[64]. All in all, gross import capacity is thus above 420 bcm, with most of the unused capacity on the lines from Russia (IEA, 2008a).

Russian and Norwegian gas is imported through pipelines into central Europe, and into the United Kingdom and the Benelux countries, respectively. LNG imports account for only about 13 % of the EU's gas imports, with the major suppliers being Algeria, Libya, Qatar, and Nigeria. Naturally, one way to deliver the gas is to combine the pipeline and LNG transportation, for instance, by transporting gas from the Barents Sea / the Yamal Peninsula into the Russian harbour on the Gulf of Finland, and thereafter, ship it in LNG form to the West (Argus, 2008b). The price might increase, but this alternative would save the Baltic Sea as toxic substances would not be released from the sea bed. On the other hand, LNG shipments would increase the maritime traffic in the Gulf of Finland[65], and hence, increase the possibility of a LNG tanker collision with an oil tanker, a possibility which has skyrocketed during this decade (Liuhto, 2003).

[64] Centre for European Policy Studies (2009, 6) estimates a much bigger role for LNG. "*In 2020, 30% of gas supply may be in the form of LNG.*" Such a share seems highly optimistic since that would mean that the annual LNG shipments should exceed 200 bcm.
[65] It has been calculated that shipping 55 bcm of natural gas would require 650 LNG tanker shipments annually i.e. 1300 voyages back and forth the Gulf of Finland (Österlund, 2009).

When analysing the necessity of new pipelines, it needs to be remembered that the gas pipelines going through Belarus and Ukraine are not used to their full capacity. Secondly, one should not forget that the Blue Stream pipeline with a capacity of 16 bcm distributes only around 10 bcm from Russia to Turkey (Argus, 2009i). Building Nabucco with a capacity of 30 bcm and using the full capacity of the pipelines going through Belarus and Ukraine[66], one could easily forget the building of South Stream with a planned capacity of 31-47 bcm (Appendix 6 and 7)[67].

Although Nabucco does not solve the diversification problem of the EU[68] and it is everything but an easy project, it is an absolute necessity for the Union in its attempts to diversify its energy sources. If the EU fails in its diversification plans, and correspondingly, if Russia manages to build direct gas pipes and a more organised

[66] It is interesting to note that Belarus has recently indicated its readiness to increase gas transit capacity from Russia to the EU (Trend, 2009). Also Ukraine has informed about its readiness to modernise and extent its pipeline network with the help of the EU (IHT, 2009b). "*The European Union has pledged to help upgrade Ukraine's network of natural gas pipelines in exchange for a stake in the country's energy management. The European Union has long said it would help Ukraine modernize its 40-year-old grid of natural gas pipelines - a network that is approximately a decade past its life expectancy. … If Europe buys a seat not just at that table but any negotiations when the word 'energy' is involved, the dynamics change, and the Russian tool will be weakened. Brussels would be a part of the negotiations in which the crisis between Russia and Ukraine is created. This will also enable the Europeans to counter (or at least be aware of) any growing rift well before it happens. Europe would be able to step into the actual negotiations for the first time, instead of sitting on the sidelines watching their lights go out. But such a scheme is riddled with problems.*" (Stratfor, 2009b). Ukraine has suggested expanding the annual pipeline capacity by 60 bcm. The current operational capacity is 120 bcm (Argus, 2009e; Joint Declaration, 2009). Correspondingly, the European Commission stresses with the words of Commissioner Ferrero-Waldner (2009) that "*the provisions of the joint declaration will help Ukraine integrate its gas sector into the EU's internal energy market. I hope they will also clear the way for some of you here today to invest in Ukraine's infrastructure. The Commission will play is part by providing Ukraine with the technical assistance it has requested to support its commitments.*" Not surprisingly, "*Prime Minister Vladimir Putin called the plan 'unprofessional' and threatened to review ties if the EU continued to ignore Russian concerns … 'If this is a small technical breakdown in complex, three-way relations between Russia, Ukraine, and the European Union, then it's nothing', said Putin. 'But if it's the start of attempts to ignore the interests of the Russian Federation, then of course it's bad*" (Reuters, 2009). RIA Novosti (2009a) writes: "*If the EU Ukraine and Russia negotiate the problem and sign a trilateral gas treaty, this will greatly change the EU's energy policy.*" "*The harsh tone of Russia's reaction, and especially the content of the official statement issued by the Ministry for Foreign Affairs, clearly demonstrate that Russia does not recognise Ukraine as a fully sovereign state with a right to shape freely its co-operation with external partners*" (EW, 2009a, 4).

[67] Nabucco and South Stream projects are rivals and it is evident that both the pipelines cannot be served with gas. It seems that that the question is not only about the gas but also the future of Central Asia. Russia seems to be very unwilling to let any Western countries balance Russia's political dominance in the region (Norling, 2007). Russia aims at torpedoing the EU's diversification attempts by buying gas supplies of other gas producing countries, such as the gas supply of Turkmenistan, Azerbaijan and Nigeria (Blank, 2009; MT, 2009b).

[68] The EU's total gas imports are close to 380 bcm, while the Nabucco's planned capacity is some 30 bcm (Arinc, 2007) i.e. less than 10 % of the EU's total gas imports (Appendix 11).

form of co-operation between the main gas producers[69], this would mean an end to attempts to create a common energy policy for the EU[70].

Nabucco's main problems are linked with four issues: (1) where to find enough gas to fill the pipeline; (2) how to convince all the necessary parties needed (gas producers in Central Asia and the Middle East, transit countries, organisations financing and building the pipe, and consumers in the EU); (3) how to secure the pipeline from terrorist attacks; and (4) how to ensure that Turkey does not to use its strengthening role as a strategic transit hub to press the Union to accept its membership before both the parties are ready for deeper integration (Socor, 2009)[71].

Gas from Azerbaijan does not suffice to fill Nabucco, as Azerbaijan's gas export capability will remain below 8 bcm at least until 2012, and Russia may buy a large part of this gas (Argus, 2009h). Therefore, Nabucco needs gas from Central Asia and/or the Middle East[72]. In order to gain access to these resources, the Trans-Caspian Pipeline[73] and/or new pipes in Iran should be erected. In this context, one should not forget that the pipeline between Northern Iran and Turkey operates far below full capacity[74] and does not link with the main producing fields in Southern Iran. Moreover, one should keep in mind that though Iran has the second largest energy reserves in the world, but it nevertheless is a net importer of natural gas (Norling, 2008). In addition, Iran needs to build working political relations with the USA and the EU before the Union can realistically rely on the Iranian energy supply[75]. Current and potential instability in the

[69] Russia, Iran and Qatar possess together over 50 % of the global gas reserves (Appendix 8).
[70] "*Member States are not obliged to adopt a foreign policy towards energy-producing countries common to all members of the European Union*" (Haghighi 2008, 165).
[71] Watson (2009) writes "*prime minister, Recep Tayyip Erdogan, told reporters during a visit to Brussels in January that his government might pull its support for Nabucco if the EU blocks discussions on the energy chapter of the country's stalled membership bid for the bloc, 'If we are faced with a situation where the energy chapter is blocked, we would of course review our position [on Nabucco],' Erdogan said, referring to reports that Cyprus is blocking the opening of Turkey's energy chapter negotiations over a dispute with Turkey over oil and gas exploration in the Mediterranean Sea.*"
[72] Still only 1 % of Europe's gas imports originate in the Middle East and the South Caspian Sea (Norling, 2008).
[73] "*Turkmen President Gurbanguly Berdymukhammedov signed a memorandum of understanding with RWE chief Juergen Grossman on Thursday [16.4.2009] that could allow the company to develop the offshore oil and gas Block 23 in the Caspian Sea. The deal also raised the prospect for the company to export the gas, which could help the European Union to diversify its gas imports*" (MT, 2009c, 7).
[74] "*The 20 bcm Tabriz-Erzurum pipeline operates far below full capacity and is currently only delivering around 7 bcm per year*" (Norling, 2008, 133).
[75] Baev (2009, 8) correctly states that "*Iran's gas fields, in particular the giant South Pars, are far more accessible than the offshore Shtokman field in the Barents Sea or remote Bovanenkovskoe field in the permanently frozen Yamal Peninsula. … If Iranian gas starts*

Caucasus region and the Middle East emphasise a need to find a sustainable political solution, since without the political solution there will not be reliable pipelines in the region (Yakobashvili, 2008).

Nord Stream, if it will come alive, is a colossal distribution channel as its planned capacity may reach 55 bcm. In order to fill Nord Stream in full, Russia should open new giant gas fields beneath the Barents Sea (the Shtokman field) and/or in the Yamal Peninsula (the Bovanenkovskoe field)[76]. The opening of these new fields is not problem-free either technically or financially. In this context, one should not forget that the exploitation of the Arctic Ocean reserves requires special technology and the transportation of the required material to the Yamal Peninsula is a challenging task, since due to global warming the permafrost in the Russian North is melting, and hence, the road network in the Russian North is even less reliable than the Russian road system in general. Furthermore, it has been argued that the opening of the Shtokman field is not economically viable if the price of an oil barrel is below USD 50-60[77]. The price of the Russian Urals blend has fluctuated between USD 40-50 in the first quarter of 2009 (Argus, 2008d).

"*The final investment decision on the Shtokman project has been delayed until next year. … The Russian company [Gazprom] says the 3.8 trillion m3 Barents Sea field is still on track to enter production in 2013. But SDC [Shtokman Development Company] chief executive Yuri Komarov warned last year that development could be delayed by a prolonged period of lower crude prices*" (Argus, 2009c, 1).

Store and share = prepare for non-delivery

The Russia-Ukraine gas dispute revealed that the natural gas storage capacities of most of the new member states are woefully inadequate that the EU could build more dependency on imported natural gas. The EU's storage capacity is at about 14 % of

getting pumped into new pipelines, the whole picture of global gas balance would change, and Europe stands to benefit from that. … This perspective, however, remains blocked by a huge obstacle: Iran's nuclear program."

[76] Gas production in the Bovanenkovskoe field may reach up to 115-140 bcm per annum, but on the other hand, the investment needs are considerable. Just an example, close to 2500 km of new pipes should be constructed before the gas can travel to the West (Solanko & Ollus, 2008). In other words, the new pipeline needed is longer than the distance from Berlin to Istanbul (2320 km) or from Brussels to Lisbon (2100 km).

[77] Troika Dialog (2009b) writes in mid-March as follows: "*Deputy Prime Minister [Russia] Igor Sechin has said that offshore development should not be a priority in the short term, because capital investments required are not justifiable in the current pricing environment*".

annual demand, being 20 % in North America with reliable external suppliers (IEA, 2008a)[78]. All in all, the current storages do not give sufficient protection to the EU from a longer non-delivery (Table 2).

Table 2. Natural gas storage of selected countries

Country	Storage meets the consumption for time period of [79]
Slovakia	180 days
Hungary	105 days
Austria	60 days
Czech Republic	60 days
Italy	52 days
Romania	43 days
Germany	40 days
Bulgaria	30 days
Croatia	24 days
Poland	14 days
Greece	6 days
Bosnia-Hertzegovina	Insignificant
Macedonia	Insignificant
Serbia	Insignificant

Source: Stratfor, 2009a

In addition to the increase in storage capacity, the EU should create clear and executable internal rules between the member states for a possible delivery irregularity. However, the rules are not enough if the Union's internal gas pipeline network does not allow these deliveries. Thirdly, the EU should require from its member states to construct a reserve energy producing capacity to replace a possible non-supply from Russia or any other external gas supplier. In other words, EU member states would not be allowed to increase their energy import dependency, if they are unable to demonstrate their replacement mechanism in a non-supply situation. However, the last requirement to become feasible would require that the energy would belong to the competence of the EU i.e. it would need a political decision, which is not self-evident if the companies of the EU member states are allowed to implement their pipeline projects without the EU's co-ordination.

[78] Approximately 90 % of the US gas imports originates in Canada (EIA, 2009).
[79] Finland does not have any natural gas storage (Solanko & Ollus, 2008).

Develop sustainable relations with the largest external energy supplier = create a reliable partnership with Russia

The EU covers one half of Russian foreign trade and 60-80 % of its foreign investments, Russia is the Union's largest energy supplier, and the EU is the main buyer of Russian gas (Wiegand, 2008). It is a well-known fact that 60 % of Gazprom's earnings are generated by Europe and Turkey (Appendix 13), which means that about 10 % of Russia's budget revenues are covered by gas sales to the West[80]. Despite the official EU-Russia mantra on strategic interdependence, I argue that the interdependence between the EU and Russia is not sustainable for seven reasons.

First, the EU is more dependent on Russia's energy than Russia on goods originating in the EU, and this relationship is not becoming more balanced since the Union's energy imports from Russia is set to grow and Russia's dependence on imported machinery and non-investment goods decreases, when it manages to modernise its domestic production. Russia's modernisation occurs gradually and it will probably take at least half a century but the EU's energy import dependency already approaches a dangerous level within two decades.

Second, energy is a more strategic commodity than money. We should not forget that due to relatively small emergency storages, the Union needs energy almost immediately but Russia can cope even if the energy-related financial inflows would stop for a longer period. Here, one should not forget that the gas sales to the EU covers a tenth of the Russian budget. Correspondingly, roughly 6 % of the EU27's primary energy consumption is covered by Russian gas at the moment. This strategic interdependence works in good weather, but what happens when the rainy day comes?

Third, the EU is divided as a buyer, whereas there is only one gas seller for foreign clients on the Russian side (Gazprom) and the Russian Government has taken a stronger grip over the oil business in the past 5 years (Liuhto, 2008), whereas the EU buyers are many and they compete with each other. In order to strengthen its energy impact on the EU, it is of Russia's interest to divide the Union. By dividing the EU in energy questions, Russia is able to increase its leverage towards the big EU countries by making them more dependent on its energy supplies and using a non-supply threat

towards the smaller members, if it manages to build direct pipes to Central Europe. Lucas (2008, xxiii) aptly writes "*The crucial imbalance is that the Kremlin does not need to worry about small East European countries as gas or oil customers. But those countries do need to worry about Russia as supplier.*" Therefore, it would be utmost important that the EU forms a common energy policy. The importance of the common energy policy becomes emphasised since Russia has intensified its attempts to organise a gas cartel with an aim to control supplies to the Western world, the EU in particular.

Fourth, Russia's desire to regain superpower status makes it more likely to use energy as a foreign policy tool than some other energy rich authoritarian countries, such as Iran, Saudi Arabia or Turkmenistan. "*Out of 55 cut-offs, explicit threats or coercive price actions by Russia since 1991, only 11 had no political underpinnings, according to a Swedish defence study.*" (for reference see Losoncz, 2007, 26).

Fifth, Russia should invest heavily in new giant gas fields[81], create an effective energy savings programme[82], and ratify the Energy Charter Treaty[83], and diminish its own natural gas consumption before it can reliably guarantee future deliveries of gas abroad (Appendix 9, 10, 11, and 12). One should not forget that close to 60 % of Russia's primary energy consumption is covered using natural gas. As long as the gas prices are artificially low in Russia[84], the Russian industries and households use gas without sufficient financial or environmental responsibility. Regrettably, Russia's gas consumption has increased faster than its production in recent years. Furthermore, related to the financial crisis, Russia's gas output has dropped by more than 10 % in the first two months of 2009 and this will probably remain the trend for the rest of the

[80] "*On 27 May 2008, Russian President Dmitry Medvedev, who used to head the energy giant's board of directors, said Gazprom contributes around 20% of the federal budget's revenues*" (Global Security, 2009).
[81] Over half of Gazprom's production comes from three giant fields, namely Urengoy, Yamburg, and Medvezhye (Appendix 10).
[82] World Bank suggests (2008, 1) "*Russia can save 45 percent of its total primary energy consumption. Russia's current energy inefficiency is equal to the annual primary energy consumption of France. Achieving Russia's full energy efficiency potential would cost a total of $320 billion to the economy and result in annual costs savings to investors and end users of about $80 billion, paying back in just four years. Benefits to the total economy are much higher: $120-150 billion per annum of energy cost savings or additional earnings from gas exports with pay-back of just two years*".
[83] It is highly unlikely that Russia would ratify the treaty in its present form (Argus, 2009g).
[84] For instance, the Estonians pay approximately 5 times higher gas price than the Russians living in a nearby city of Pskov. In fact, the gas price is double in Estonia compared with Belarus. In other words, the transportation cannot explain the higher energy prices in the Baltic States (Russian Analytical Digest 41 & 53, 2008; RIA Novosti, 2009b).

year (Troika Dialog, 2009a/d).

Sixth, Russia is likely to be more successful in diversifying a greater share of its energy exports than the EU being able to diversify its energy imports[85]. In this context, one should keep in mind that though Nabucco is an utmost necessary step in the EU's diversification plans, it nevertheless, will form only less than 10 % of the Union's gas imports i.e. approximately 2 % of the EU's primary energy consumption. Therefore, other diversification measures are absolutely necessary if the EU is unable to reduce its energy consumption.

Seventh, Russia's leadership does not feel similar pressure from voters, political interest groups, NGOs and media compared to the EU's leaders, and therefore, the Russian leadership might end up making decisions which are not truly supported by the majority of the population. In other words, political responsibility is structured differently in Russia, and hence, the decisions might more reflect the national security interests of the state than the views of the population. In addition, the political stability of Russia should not be taken for granted in the long run, since the way is paved for a much more authoritarian regime, if the siloviki group wins the power struggle within the Kremlin. A more authoritarian regime might be tempted to decrease the political and civil rights of the people, and political immobility, when continued for too long, increases social pressure, which one day will erupt like a volcano, affecting also Russia's natural gas supply.

The present day relations between the EU and Russia are far from optimal, and hence, we should build our trade interdependence on less political commodities than on energy. The more EU-Russia relations are based on energy the more problems we will face in the future, regardless of the party who will be blamed for the energy crises in the future (Argus, 2009a). Therefore, it would be extremely important to strengthen non-energy trade and economic co-operation between small and medium-sized enterprises (SMEs)[86], since the Russian SMEs are not political actors, whereas the large Russian corporations and the oligarchs who run them are, to a large extent, politicised players whether they want to be or not.

[85] It needs to be stressed that the EU and Asian countries are not after the same Russian gas fields, as it is economically non-viable to distribute gas from Kovykta or Sakhalin to Europe, or vice versa, gas from Shtokman or Yamal to Asia (Argus, 2008a).

Concluding remarks

The massive gas pipelines are strategic decisions to the EU, Russia and other gas producing countries, and therefore, the decisions should be made extremely carefully with future generations in mind. Some energy companies and governments involved unnecessarily rush with Nord Stream and South Stream projects, and hence, endanger the strategic energy planning of the EU.

Even if the EU does not have a common energy policy at the moment, it seems irresponsible if the member states play against the strategic interests of the EU. If the interests of some energy companies or member states have a higher priority than the EU's energy vision, the countdown of the EU has already started. The EU's competence on energy issues should not be limited to praying for warmer winters and colder summers.

The EU and its members should prioritise pipelines (Nabucco), which allow the Union to diversify their external energy sources, and only thereafter, consider whether to proceed with other pipelines. Secondly, if the expansion and modernisation of the Ukrainian gas network can be achieved in full harmony with all the main parties involved, it may prove Nord Stream and South Stream to become unnecessary.

However, before the EU increases its gas imports from Russia, it should be convinced that Russia is able to invest gargantuan amounts to develop the gas fields in the Russian North. This is not the case at the moment, since the readiness of Gazprom to invest heavily in the future has become weaker, since both production volumes have decreased[87] and gas prices will go down[88] i.e. Gazprom's investment programme has been severely hit by the international financial crisis[89], regardless of any opposing

[86] Wiegand (2008, 12) argues that "*remove hydrocarbons [natural gas and oil] and the EU's trade with Russia is about the same as with Iceland or Mexico.*"

[87] The gas output of Gazprom, which is responsible for over 80 % of Russia's gas production, has decreased close to 20 % in January-March compared to the same period a year earlier (Itar-Tass, 2009b). "*Gazprom could be forced to cut gas output by 10% over the next four to five years. Production this year may drop to 492 bcm, down 10.5% y-o-y*" (Troika Dialog, 2009f).

[88] "*The average price for Gazprom's European supplies was also expected to decrease to $260 per 1,000 cubic meters, from the $280 previously expected and about $400 last year, Medvedev [Gazprom'äs deputy chairman] said*" (MT, 2009a, 6). "*On 1 April Gazprom officially admitted that it expected a major slump - by 45 percent - in the revenues from gas exports to Europe in 2009*" (EW, 2009b, 7).

[89] "*The investment programme is based on an oil price of $50/bl and a dollar exchange rate of Rbs31.80*" (Argus, 2009d, 1). According to Troika Dialog (2009e, 2), "*Gazprom now needs to save as much money as it can, given that its investment program will, in our view, significantly exceed its operating cash flow next year, especially if oil prices stay at current levels*".

statement from the Russian Government or Gazprom's top management (Argus, 2008c).

The EU should help Russia to implement the energy savings programme proposed by the World Bank (2008), since it aids Russia to rationalise its energy consumption, and simultaneously, an energy savings programme would improve Russia's ability to sell more hydrocarbons abroad. The energy savings programme of Russia could be a common exercise, which benefits both parties and finally enables the EU and Russia to build trust. Without trust any external pipeline is a threat and without trust any partnership is doomed to failure. Trust should be built on the basis of concrete actions not on political slogans on paper, i.e. the renewing of PCA does not change the situation if mutual trust cannot be created.

It is worth recalling two proverbs on trust: (1) the proper limit of trust is prudence, not fear, and (2) trust in the future is called hope. So let us hope that the EU and Russia can soon invent commonly acceptable actions, and hence build mutual trust. Without mutual trust the EU-Russia partnership is an empty word, and the renewing of PCA cannot fill this emptiness.

To summarise some of the policy recommendations of the article: (1) energy saving should have a much higher priority in political decision-making and industrial policies within the EU; (2) EU's own energy production should be increased by building more nuclear power units and supporting renewable energy sources substantially; (3) the EU and Russia should implement jointly Russia's energy savings programme; (4) building Nabucco and modernising and extending the Ukrainian pipeline system should have a priority over Nord Stream and South Stream; (5) hydrocarbon storages, North-South energy infrastructure and emergency energy producing capacity should be constructed to prepare for possible external energy non-supply; (6) the SME collaboration should be promoted in the EU-Russia relations in order to avoid the political risks linked with extensive energy co-operation; and (7) create trust between the EU and Russia with concrete actions not with grand declarations.

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Appendix 1. Primary energy consumption of selected countries in 2007

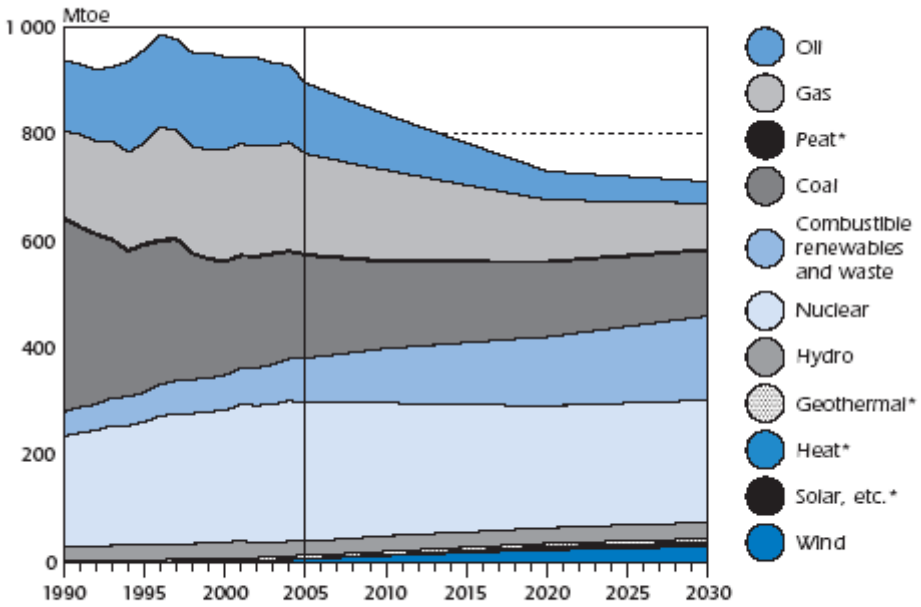
	Oil	Natural gas	Coal	Nuclear	Hydro
USA	40 %	25 %	24 %	8 %	2 %
Azerbaijan	36 %	60 %	0 %	0 %	4 %
Finland	39 %	13 %	17 %	20 %	12 %
France	36 %	15 %	5 %	39 %	6 %
Germany	36 %	24 %	28 %	10 %	2 %
Italy	46 %	39 %	10 %	0 %	5 %
Kazakhstan	18 %	30 %	50 %	0 %	3 %
Norway	22 %	8 %	1 %	0 %	68 %
Poland	26 %	13 %	60 %	0 %	1 %
Russia	18 %	57 %	14 %	5 %	6 %
Turkmenistan	19 %	81 %	0 %	0 %	0 %
Ukraine	11 %	43 %	29 %	15 %	2 %
United Kingdom	36 %	38 %	18 %	7 %	1 %
Iran	42 %	55 %	1 %	0 %	2 %
Qatar	18 %	82 %	0 %	0 %	0 %
Algeria	34 %	63 %	2 %	0 %	0 %
Egypt	48 %	46 %	1 %	0 %	5 %
China	20 %	3 %	70 %	1 %	6 %
Japan	44 %	16 %	24 %	12 %	4 %
EU27 (2005)	37 %	25 %	18 %	14 %	7 % *

* The share includes all renewable energy sources.

Sources: BP, 2008; European Environment Agency, 2008

Appendix 2. The EU's energy production until 2030

Energy Production by Source, 1990 to 2030



* negligible.

Sources: *Energy Balances of OECD Countries*, IEA/OECD Paris, 2007 and EU submission.

Energy Production by Fuel in the EU27, 2005 to 2030

	2005	*2010*	*2020*	*2030*	*Share 2005*	*Share 2030*	*Change Share 2030/2005*	*Production 2020/2005*	*Production 2030/2005*
	Mtoe				%				
Coal	192	162	138	123	21	19	–10	–28	–36
Peat	3	3	3	3	0	0	5	–2	–2
Oil	132	105	53	41	15	12	–15	–60	–69
Gas	188	168	115	85	21	20	–4	–39	–55
Combustible renewables & waste[1]	82	102	129	158	9	12	33	57	92
Nuclear[2]	260	249	228	229	29	30	3	–12	–12
Hydro	26	29	29	30	3	3	18	11	16
Wind	6	12	23	29	1	1	120	285	386
Geothermal	5	6	6	6	1	1	16	12	20
Solar/Other	2	2	6	9	0	0	46	297	451
Total	898	838	732	713	100	100	–	–18	–21

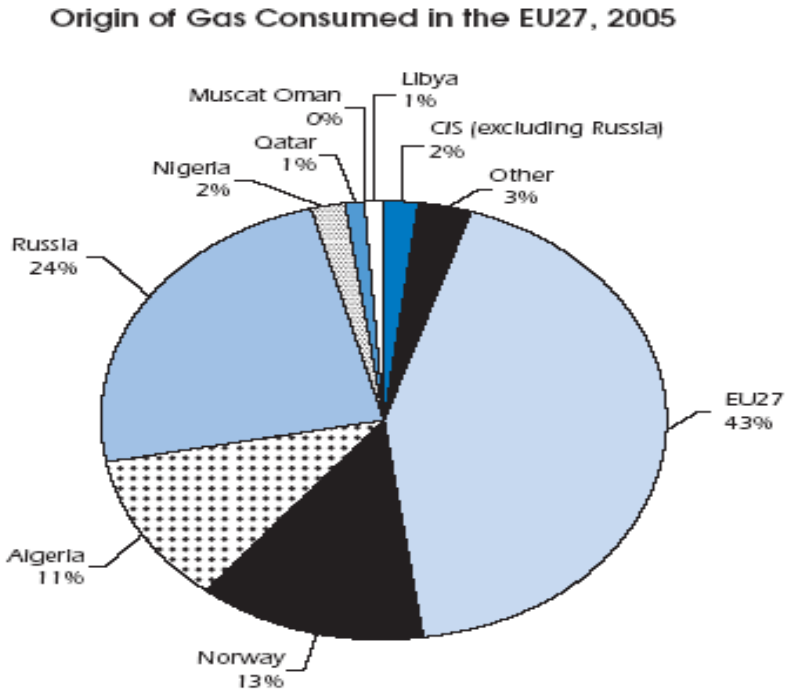
1. Note that data on imported combustible renewables are not available for many countries. The figures are therefore overstating the EU internal resource.

2. Note that while uranium is imported into the EU, nuclear is considered to be a domestic source of energy. The uranium loaded into EU25 reactors in 2006 equals 210 to 336 Mtoe – owing to different statistical treatment, this figure cannot be compared with the 260 Mtoe supply contribution from uranium in 2005.

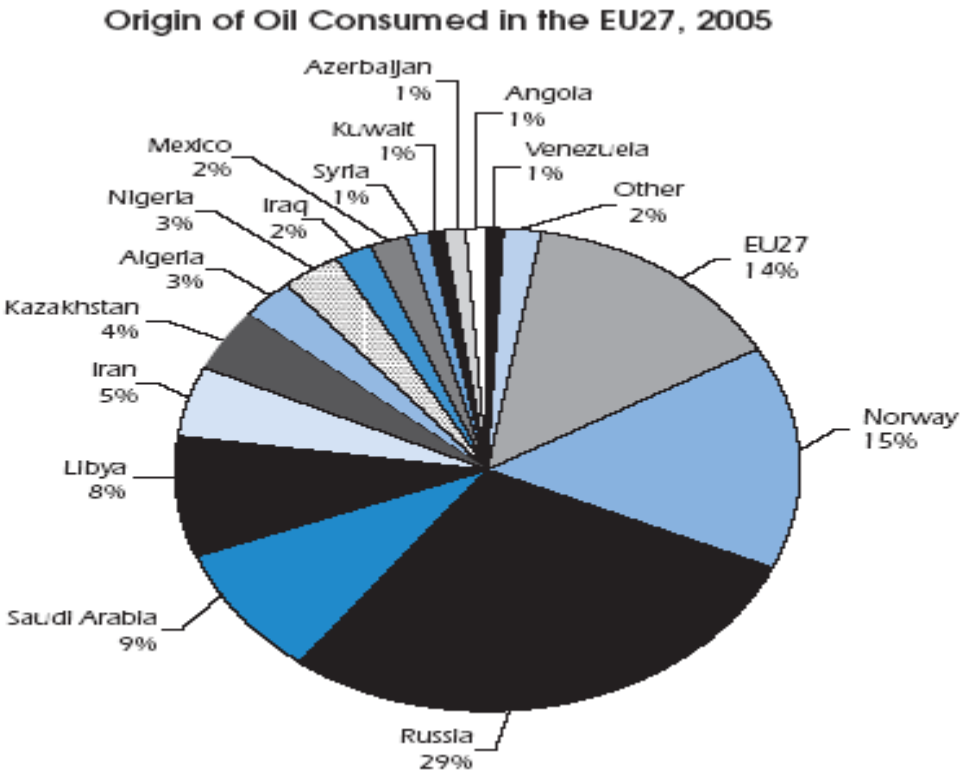
Sources: *Energy Balances of OECD Countries*, IEA/OECD Paris, 2007 and EU submission.

Source: IEA, 2008a

Appendix 3. The origin of the EU's gas and oil consumption

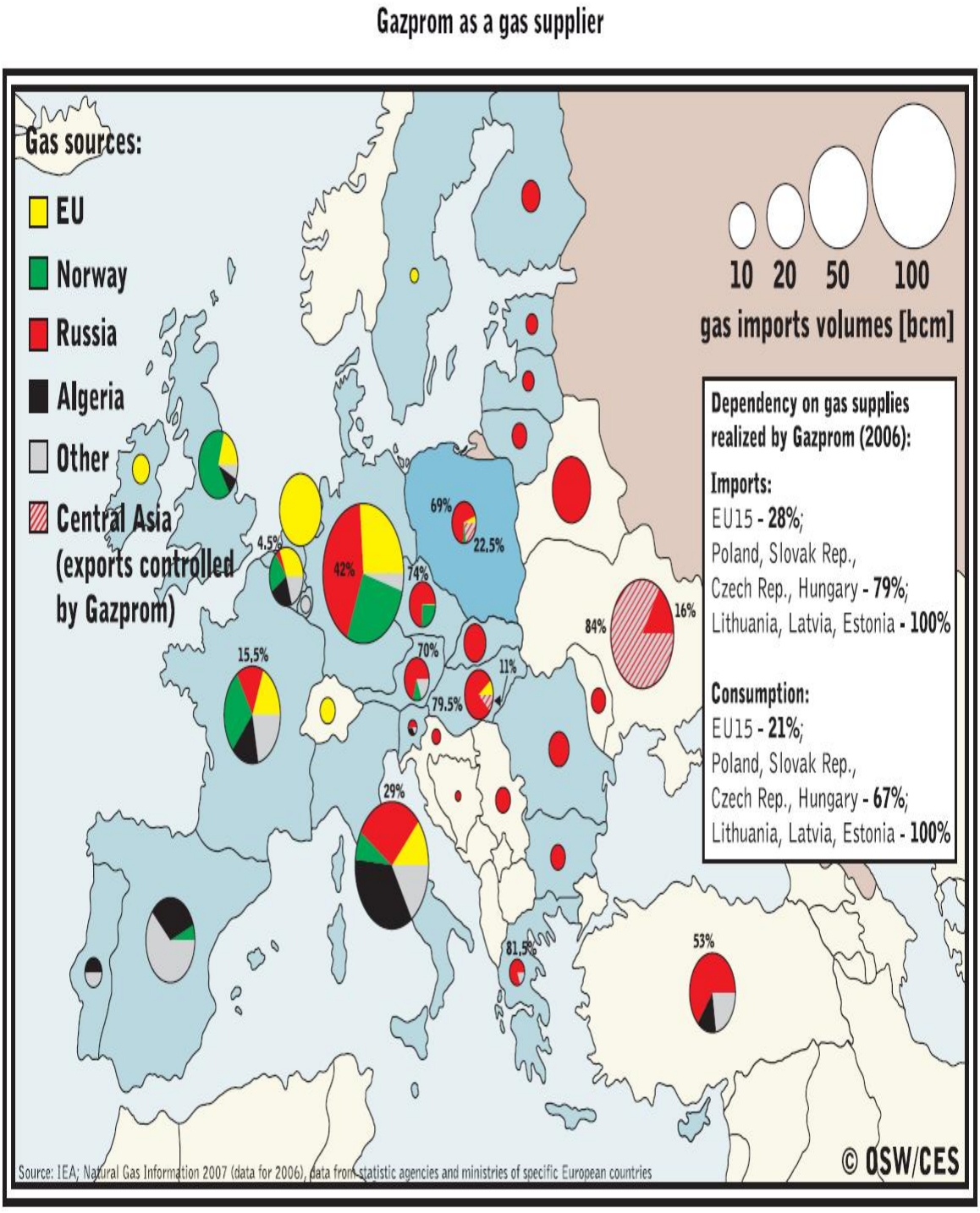


Source: EU submission.



Source: IEA, 2008a

Appendix 4. The sources of the EU member states' gas consumption



Source: Loskot-Strachota & Pelczynska-Nalecz, 2008

Appendix 5. EU member states' gas imports and Russia's share

	Imports from Russia (in bcm)	Percentage of total gas imports
Bulgaria	2.7	100
Estonia	0.7	100
Finland	4.9	100
Slovakia	7.0	100
Latvia	1.4	100
Lithuania	2.8	100
Romania	5.5	87.3
Greece	2.7	84.4
Hungary	8.8	80.0
Czech Republic	7.4	77.9
Austria	6.6	75.9
Poland	7.7	72.6
Slovenia	0.7	63.6
UKa	8.7	41.2
Germany	34.4	37.9
Italy	22.1	28.6
The Netherlandsa	4.7	25.4
France	10.0	20.2
Belgium	3.2	14.1

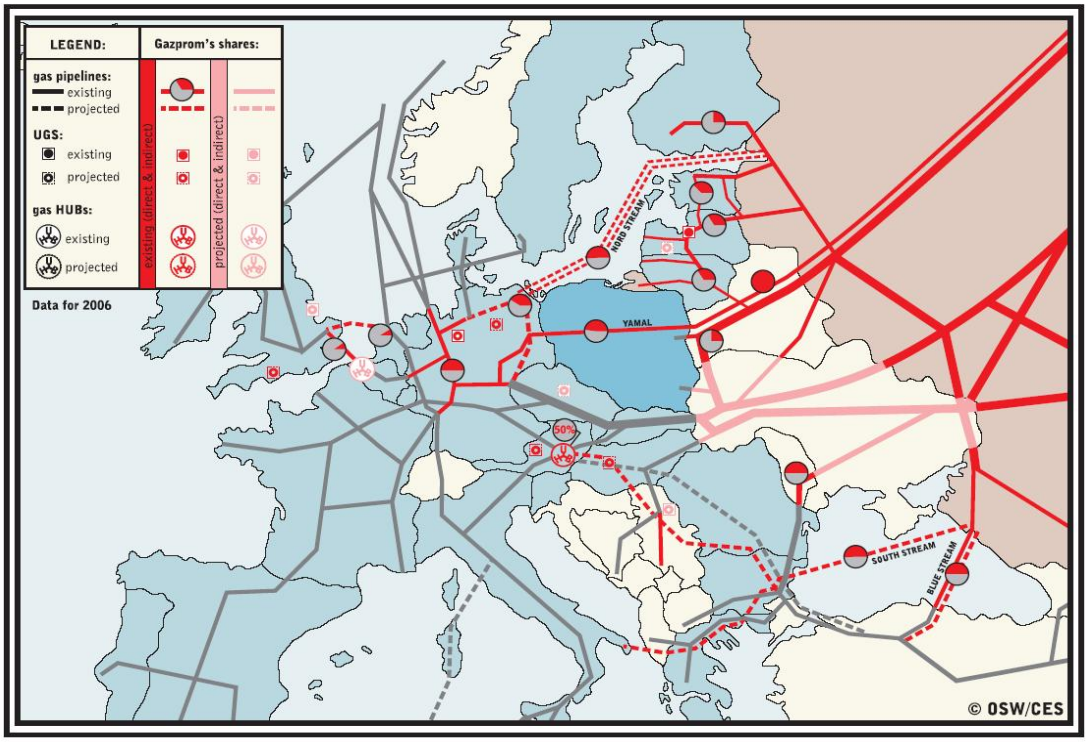
Note: a) The Netherlands and the UK are still large gas producers on their own; their dependency level on Russian gas is therefore rather misleading.

Source: Gazprom (2007) Annual Report 2006. Moscow: Gazprom, pp. 49-50 BP Statistical Review of World Energy June 2007, p. 30; own calculations.

Source: Russian Analytical Digest 34, 2008

Appendix 6. The eastern gas pipelines towards the EU

Gazprom's major investments in gas infrastructure in Europe, existing and planned

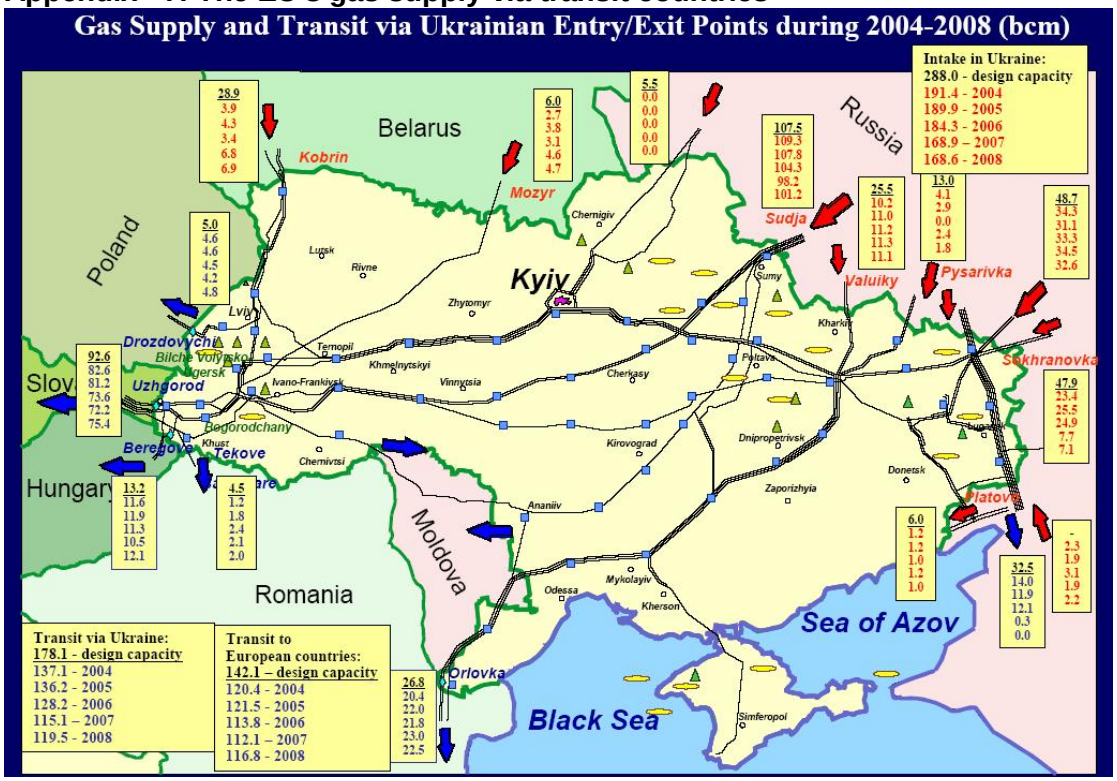


Pipeline	Route	Capacity 2005	Capacity 2010
Brotherhood/Union (Soviet network)	Russia – Ukraine – Central Europe	130 bn. cbm	130 bn. cbm
Polar Lights (Soviet network)	Russia – Belarus – Ukraine – Central Europe	25 bn. cbm	25 bn. cbm
Transbalkan (Soviet network)	Russia – Ukraine – Balkans	20 bn. cbm	20 bn. cbm
Finland Connector (Soviet network, extended 1999)	Russia – Finland	20 bn. cbm	20 bn. cbm
Yamal (since 1999)	Russia – Belarus – Poland – Western Europe	28 bn. cbm	28 bn. cbm
Blue Stream (since 2002)	Russia – Black Sea – Turkey	16 bn. cbm	16 bn. cbm
Baltic Sea (NEGP, probably from 2010)	Russia – Baltic Sea – Germany	–	28 bn. cbm
Total		*239 bn. cbm*	*267 bn. cbm*

Source: Research Centre for East European Studies, Bremen – author's compilation.

Sources: Loskot-Strachota & Pelczynska-Nalecz, 2008; Russian Analytical Digest 41, 2008

Appendix 7. The EU's gas supply via transit countries



Gas transported via Ukraine (billion cubic meters)

Year	Total	To Europe	To CIS
2000	123.6	109.3	11.3
2001	124.4	105.3	19.1
2002	121.6	106.1	15.1
2003	129.2	112.4	16.8
2004	137.1	120.3	16.8
2005	136.4	121.5	14.9
2006	128.5	113.8	14.7
2007	115.2	112.1	3.1

Note: Excludes volumes for domestic use
Note: the main explanation for the drop in transit volumes to the CIS in 2007 is that Russian gas formerly transported through eastern Ukraine back into southern Russia is now taken by a different route via Russian territory
Source: Naftogaz Ukrainy

Supply potential of the via Turkey

Country	Volume	Transit country	Potential by 2015	Existing system
Iran	10 bcm	Turkey	20-30 bcm	3-10 bcm
Turkmenistan	13 bcm	Iran/Turkey	30 bcm	13 bcm
Turkmenistan	16 bcm	Aze.Geo/Turkey	30 bcm	None
Saudi Arabia	10-20 bcm	Jordan/Syria/Turkey	20 bcm	None
Azerbaijan	8 bcm	Turkey	20 bcm	8 bcm
Iraq	10 bcm	Turkey	10 bcm	None
Egypt	4 bcm	Jordan/Syria	10 bcm	Link to Syria

Sources: Özdemir, 2008; Bekker, 2009; Russian Analytical Digest 53, 2009

Appendix 8. Global gas reserves and production

	Reserves (R)	Production (P)	R/P ratio
North America	**4.5 %**	**26.6 %**	**10.3**
USA	3.4 %	18.8 %	10.9
Canada	0.9 %	6.2 %	8.9
Mexico	0.2 %	1.6 %	8.0
S. & Central America	**4.4 %**	**5.1 %**	**51.2**
Europe & Eurasia	**33.5 %**	**36.5 %**	**55.2**
Azerbaijan	0.7 %	0.3 %	Over 100
Denmark	0.1 %	0.3 %	12.6
Germany	0.1 %	0.5 %	9.6
Italy	0.1 %	0.3 %	10.0
Kazakhstan	1.1 %	0.9 %	69.8
Netherlands	0.7 %	2.2 %	19.4
Norway	1.7 %	3.0 %	33.0
Poland	0.1 %	0.1 %	26.4
Romania	0.4 %	0.4 %	54.4
Russia	25.2 %	20.6 %	73.5
Turkmenistan	1.5 %	2.3 %	39.6
Ukraine	0.6 %	0.6 %	54.0
United Kingdom	0.2 %	2.5 %	5.7
Uzbekistan	1.0 %	2.0 %	29.8
Others	0.2 %	0.4 %	39.4
Middle East	**41.3 %**	**12.1 %**	**Over 100**
Bahrain	Less than 0.05%	0.4 %	7.4
Iran	15.7 %	3.8 %	Over 100
Iraq	1.8 %	n.d.	Over 100
Kuwait	1.0 %	0.4 %	Over 100
Oman	0.4 %	0.8 %	28.6
Qatar	14.4 %	2.0 %	Over 100
Saudi Arabia	4.0 %	2.6 %	94.4
Syria	0.2 %	0.2 %	54.7
United Arab Emirates	3.4 %	1.7 %	Over 100
Yemen	0.3 %	n.d.	Over 100
Others	Less than 0.05%	0.2 %	18.5
Africa	**8.2 %**	**6.5 %**	**76.6**
Algeria	2.5 %	2.8 %	54.4
Egypt	1.2 %	1.6 %	44.3
Libya	0.8 %	0.5 %	98.4
Nigeria	3.0 %	1.2 %	Over 100
Others	0.7 %	0.4 %	Over 100
Asia Pacific	**8.2 %**	**13.3 %**	**36.9**

Source: BP, 2008

Appendix 9. Gas production and consumption of selected countries

Production (billion cubic meters)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Russia	431.0	469.2	507.7	550.2	574.4	597.9	599.8	597.4	576.5	566.4	555.4	561.1	532.6	551.3	551.0	545.0	542.4	555.4	578.6	591.0	598.0	612.1	607
USA	465.9	454.7	470.6	484.3	490.2	504.3	501.1	505.2	512.4	533.0	526.7	533.9	535.3	538.7	533.3	543.2	555.5	536.0	540.8	526.4	511.8	524.1	545.9
Iran	14.6	15.2	16.0	20.0	22.2	23.2	25.8	25.0	27.1	31.8	35.3	39.0	47.0	50.0	56.4	60.2	66.0	75.0	81.5	91.8	100.9	105.0	111.9
Canada	84.2	79.1	86.1	99.3	105.4	108.9	114.8	127.8	139.0	149.1	158.7	163.6	165.8	171.3	177.4	183.2	186.8	187.8	182.7	183.6	185.9	187.0	183.7
Turkmenistan	77.6	79.0	82.2	82.4	83.9	81.9	78.6	56.1	60.9	33.3	30.1	32.8	16.1	12.4	21.3	43.8	47.9	49.9	55.1	54.4	58.8	62.2	67.4
Norway	26.2	26.1	28.2	28.3	28.7	25.5	25.0	25.8	24.8	26.8	27.8	37.4	43.0	44.2	48.5	49.7	53.9	65.5	73.1	78.5	85.0	87.6	89.7

Source: BP Statistical Review of World Energy June 2008, http://www.bp.com/statisticalreview

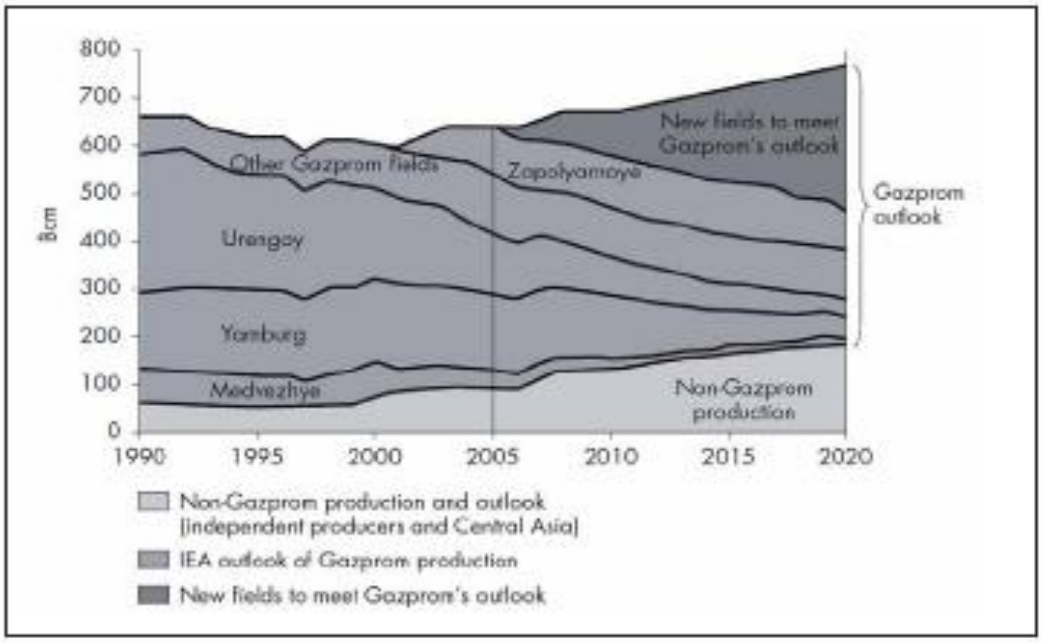
Consumption (billion cubic meters)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Share of total
USA	629.9	634.4	660.7	629.7	651.5	630.8	634.0	623.3	613.1	652.9	22.6 %
Azerbaijan	5.2	5.6	5.4	7.8	7.8	8.0	8.6	8.9	9.4	8.3	0.3 %
Belarus	15.0	15.3	16.2	16.1	16.6	16.3	18.5	18.9	19.6	19.4	0.7 %
Finland	3.7	3.7	3.7	4.1	4.0	4.5	4.3	4.0	4.2	4.1	0.1 %
Germany	79.7	80.2	79.5	82.9	82.6	85.5	85.9	86.2	87.2	82.7	2.8 %
Italy	57.2	62.2	64.9	65.0	64.6	71.2	73.9	79.1	77.4	77.8	2.7 %
Kazakhstan	7.3	7.9	9.7	10.1	11.1	13.3	15.4	19.4	20.9	19.8	0.7 %
Netherlands	38.7	37.9	39.2	39.1	39.3	40.3	41.1	39.5	38.3	37.2	1.3 %
Norway	3.8	3.6	4.0	3.8	4.0	4.3	4.6	4.5	4.4	4.3	0.1 %
Poland	10.6	10.3	11.1	11.5	11.2	11.2	13.1	13.6	13.7	13.7	0.5 %
Russia	364.7	363.6	377.2	372.7	388.9	392.9	401.9	405.1	432.1	438.8	15.0 %
Turkmenistan	10.3	11.3	12.6	12.9	13.2	14.6	15.5	16.6	18.9	21.9	0.7 %
Ukraine	68.7	73.0	73.1	70.9	69.8	67.8	73.2	73.0	67.1	64.6	2.2 %
UK	87.9	93.6	96.9	96.4	95.1	95.4	97.4	94.9	90.0	91.4	3.1 %
Uzbekistan	47.0	49.3	47.1	51.1	52.4	47.2	44.8	44.0	43.2	45.6	1.6 %
Iran	51.8	58.4	62.9	70.2	79.2	82.9	93.4	102.4	108.7	111.8	3.8 %
Qatar	14.8	14.0	9.7	11.0	11.1	12.2	15.0	18.7	19.6	20.5	0.7 %
Algeria	20.9	21.3	19.8	20.5	20.2	21.4	22.0	23.2	23.7	24.4	0.8 %
Egypt	12.0	14.3	18.3	21.5	22.7	24.6	26.2	25.8	29.2	32.0	1.1 %

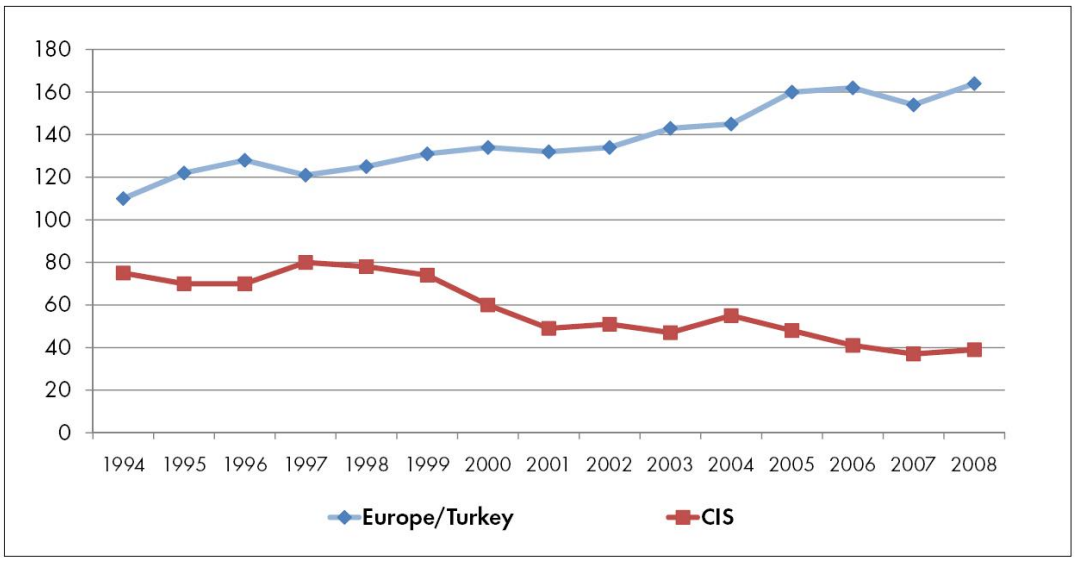
Sources: BP, 2008; Russian Analytical Digest 56, 2009

Appendix 10. Russia's major gas fields and exports[90]

Figure 3. Russian Gas Supply Outlook



Source: IEA estimates, in „Optimising Russian natural Gas, IEA, Paris, 2006, p.34



Note: data for 2008 are estimated on the basis of data for January - November

Source: Russian Federal Service for Statistics, http://www.gks.ru/dbscripts/Cbsd/DBInet.cgi

Source: Russian Analytical Digest 53, 2009

[90] "*New rules on third-party access to Gazprom's pipeline network could be put on hold indefinitely as a result of the financial crisis.*" (Argus, 2009f, 4). If the third-party access to the pipeline system does not open in full, one should not expect non-Gazprom production to grow at the speed proposed by the upper table. At the end of March, Troika Dialog (2009c) reports that "*Gazprom may reduce gas intake from independents by 8%*".

Appendix 11. Russia's gas exports by country

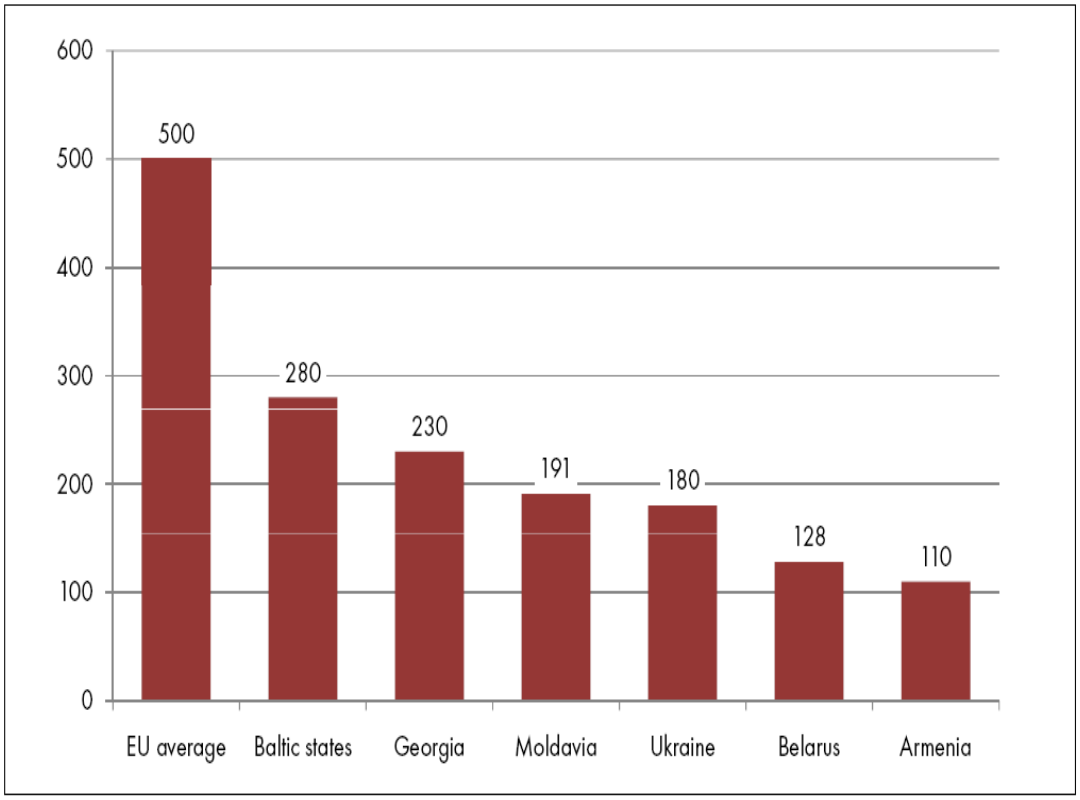
Gazprom's gas sales abroad, billion cubic meters

Europe		CIS	
Germany	34.5	Ukraine	59.2
Turkey	23.5	Belarus	20.6
Italy	22.0	Kazakhstan	10.0
UK	15.2	Moldova	2.7
France	10.1	Armenia	1.9
Hungary	7.5	Georgia	1.2
Czech Republic	7.2		
Poland	7.0		
Slovakia	6.2		
Netherlands	5.5		
Austria	5.4		
Finland	4.7		
Romania	4.5		
Belgium	4.3		
Lithuania	3.4		
Greece	3.1		
Bulgaria	2.8		
Serbia	2.1		
Croatia	1.1		
Latvia	1.0		
Estonia	0.9		
Slovenia	0.6		
Switzerland	0.4		
Bosnia Hertzegovina	0.3		
Macedonia	0.1		
Others	0.5		

Source: Gazprom, 2008

Appendix 12. Gas prices

Gazprom's export prices (USD/thousand cubic meters, 2008)



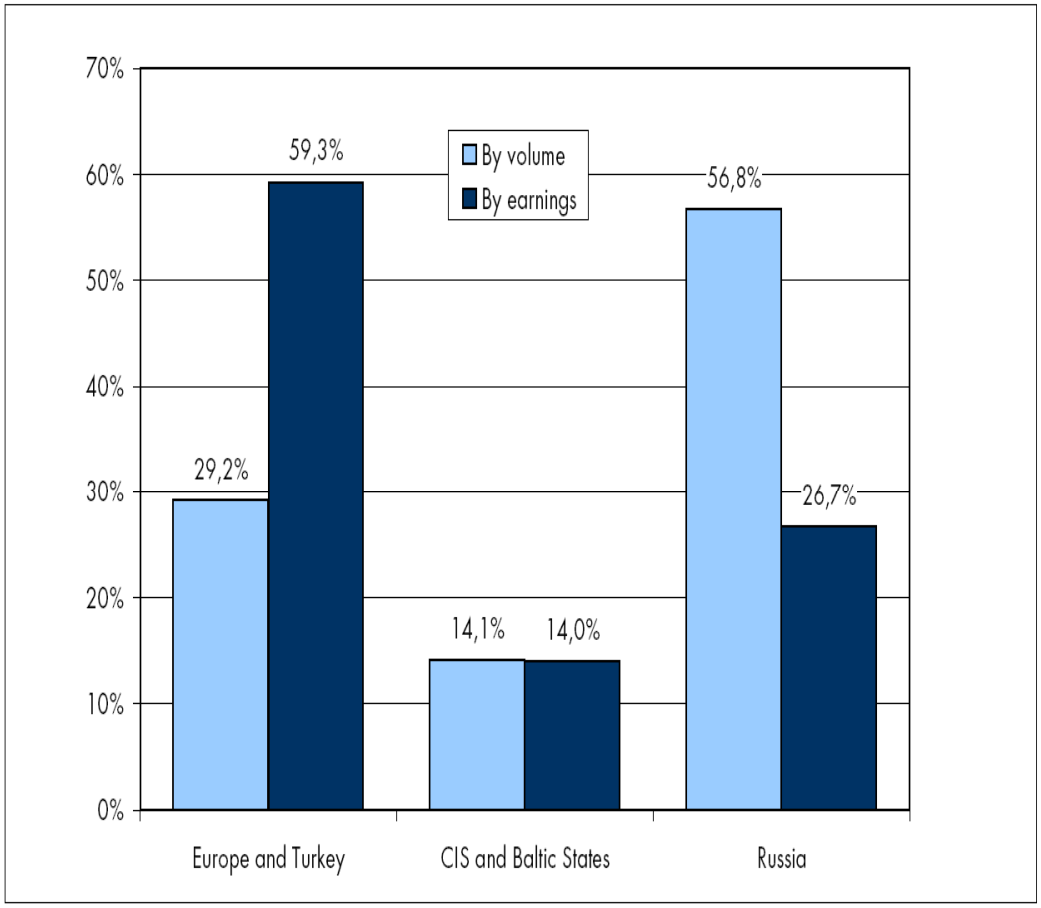
Source: Energy Information Administration, http://www.eia.doe.gov/emeu/cabs/Russia/NaturalGas.html

	Price at European border (estimate)	Transport through Ukraine, Slovakia and Czech rep.	Netback price at Russo-Ukrainian border	Actual import prices	Differential between actual prices and European netback
2004	143.05	27.00	116.05	50	66.05
2005	189.31	31.58	157.73	50–80	77.73–107.73
2006	246.51	36.53	209.98	95	114.98
2007	254.48	38.35	216.13	130	86.13
2008 (est.)	368.32	41.13	327.19	179.50	147.69

Source: Gas Strategies, transit companies, author's calculations

Source: Russian Analytical Digest 53, 2008

Appendix 13. Gazprom's earnings by region



Source: Gazprom company data

Source: Russian Analytical Digest 53, 2008

Some institutional factors of the EU's logistics in EU-Russia natural gas relations

Miklos Losoncz [91]

Contents

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Introduction

A great number of reports on the security of natural gas supply in the European Union discussed diversification in terms of reducing the share of natural gas in energy production and consumption on one hand and diminishing the relative weight of Russia in imports of natural gas on the other one. Both approaches focused on the availability and the utilisation of the physical product.

The basic assumption of this article is that in addition to the availability of resources, the security of natural gas supply should comprise three other elements: the security of price, the reliability of partners and the access to the physical infrastructure including that established in transit countries. The dispute over natural gas between Russia and the Ukraine early 2009 must have demonstrated rather dramatically the relevance of this broadly defined security of supply.

The hypothesis of this article is that the security of supply in the EU can be improved significantly by developing the institutional system and the regulatory framework of natural gas both within the EU and in its relations with Russia as a source country and the Ukraine as a transit country. The major consideration behind this reasoning is that, first, due to orders of magnitude relating to its share in world-wide proved reserves, global exports and European imports, Russia as a source country of natural gas imports cannot be neglected or completely substituted by other supplier countries. Second, the geographical diversification of imports does not necessarily improve the security of supply in qualitative terms since the reliability of alternative suppliers is not much better in many respects. Within certain limits, progress in the institutionalisation of EU-Russia energy relations may contribute to the reduction of costs in the security of natural gas supply.

Reliance on imports and the reliability of partners

With slow growth or even slight fall of indigenous production, an increasing share of demand of natural gas is being met by imports in OECD Europe. The relative weight of imports in apparent or gross consumption was up from 55 % in 1998 to 79 % in 2008 (Table 1). The share of OECD countries in imports of natural gas by OECD Europe totalled 36 % in 1998 and 39 % in 2008 concentrated on Norway and the Netherlands. Among non-OECD countries, the former Soviet Union (pipeline gas) and Algeria (liquefied natural gas i.e. LNG) are the main suppliers. Nevertheless, the relative share

of the former Soviet Union declined from 42 % in 1998 to 32 % in 2008. In 2008, non-OECD imports accounted for 48 % of apparent consumption in OECD Europe which is a rather high degree of dependence on external suppliers. With the fall of natural gas production in OECD Europe and growing demand, the dependency of supply on external producers is expected to surge in the long term.

The major proportions are more or less similar in the enlarged European Union. Imports account for 25 % of apparent consumption, another quarter comes from Russia, 16 % from Norway and 15 % from Algeria, the remainder from Libya, Nigeria and Central Asia.

Table 1. The geographical distribution of imports of natural gas

	Million cubic metres			Percentage of total		
	1998	**2005**	**2008**	**1998**	**2005**	**2008**
Total OECD	**86,225**	**140,740**	**171,287**	**35.8**	**35.7**	**39.1**
Netherlands	35,895	45,414	52,782	14.9	11.5	12.0
Norway	42,501	63,395	82,089	17.7	16.1	18.7
Germany	3,473	23,138	25,209	1.4	5.9	5.8
Total non-OECD	**154,364**	**253,504**	**266,896**	**64.2**	**64.3**	**60.9**
Total former USSR	99,987	129,131	142,176	41.6	32.8	32.4
Algeria	48,834	59,397	53,069	20.3	15.1	12.1
Libya	826	5,310	10,390	0.3	1.3	2.4
Other non-specified	4,717	44,216	61,261	2.0	11.2	14.0
Total	**240,589**	**394,244**	**438,183**	**100.0**	**100.0**	**100.0**

Source: International Energy Agency: Monthly Natural Gas Surveys

The objective of the geographical diversification of imports is to reduce the dependence of natural gas supply on the largest and “less reliable” countries. A key question to answer in this context is reliability: which countries should be considered unreliable or less reliable. In most general terms reliability implies the existence of the broadly defined institutional system of the market economy inherent in the OECD countries. With common values, the rule of law, the institutional system of the market economy, the probability is high that countries concerned or more precisely their economic organisations would meet their commitments they had made in bilateral and multilateral international agreements and commercial contracts.

Table 2. Exports of natural gas in 2007

	Million cubic meters	Per cent
Russia	191,892	21.3
Canada	106,988	11.9
Norway	85,136	9.5
Algeria	62,676	7.0
Netherlands	55,666	6.2
Turkmenistan	51,064	5.7
Qatar	38,329	4.3
Indonesia	33,554	3.7
Malaysia	32,039	3.6
USA	22,905	2.5
Rest of the world	219,939	24.4
Total	900,188	100.0

Source: International Energy Agency (2008), 13

According to the figures of the International Energy Agency, OECD countries accounted for less than third of global natural gas exports with Canada 12 %, Norway 9.5 %, the Netherlands 6.2 % and the USA 2.5 % (Table 2). Canada and the USA are irrelevant for the supply of Europe, whereas with the gradual depletion of their fields, exports of Norway and the Netherlands are on the decline in the long- term. According to the figures of British Petrol, the share of OECD countries in proved natural gas reserves is even smaller; it totalled only 14 % in 2007.

Non-OECD countries can be classified differently. The country risk assessment indicators and rankings of credit rating agencies (Moody's Investor Service, Standard and Poor's, etc.) may be instructive. There are other organisations, too, involved in the assessment of political and economic risks. The analysis of natural gas suppliers from this point of view would go beyond the scope of this report. Russia accounted for 21.3 % of world exports and 25.2 % for proved natural gas reserves in 2007. Algeria, Turkmenistan, Indonesia and Malaysia had significant position in world exports, whereas proved reserves are concentrated on a dozen non-OECD countries in the Middle East, Africa, Central Asia and Latin America (Table 3).

Table 3. Proved natural gas reserves at end 2007

	Trillion cubic meters	Per cent of total
Russia	44.65	25.2
Iran	27.80	15.7
Qatar	25.60	14.4
Saudi Arabia	7.17	4.0
United Arab Emirates	6.09	3.4
USA	5.98	3.4
Nigeria	5.30	3.0
Algeria	4.52	2.5
Venezuela	5.15	2.9
Iraq	3.17	1.8
Kazakhstan	1.90	1.1
Norway	2.96	1.7
Turkmenistan	2.67	1.5
Indonesia	3.00	1.7
Australia	2.51	1.4
Malaysia	2.48	1.4
China	1.88	1.1
Egypt	2.06	1.2
Uzbekistan	1.74	1.0
Kuwait	1.78	1.0
Other non-specified	18.95	10.6
Total	177.36	100.0

Source: British Petrol (2008), 22

Based on proved reserves as well as long-term production and consumption trends, the conclusion can be drawn that imports relative to consumption will certainly grow in OECD Europe and the EU and there will be a shift in the geographical structure of natural gas imports towards non-OECD member states representing various levels of institutional development. Another conclusion is that many non-OECD countries, such as Iran, Nigeria, Libya, the central Asian states (Kazakhstan, Azerbaijan and Turkmenistan), Venezuela, etc. do not appear to be more stable politically or more reliable or less risky than Russia. (It should be noted that because of shortages of appropriate physical infrastructure a considerable part of central Asian natural gas can get access to European markets through Russia.) In this respect the rationality of further diversification of natural gas imports in favour of these non-OEC countries beyond a certain critical point and the simultaneous reduction of Russia's share may appear questionable. Anyway, the dependence of the EU on Russia in natural gas imports is not extremely high in quantitative terms. Nevertheless, there are huge

differences behind the average of the dependency rate. On one hand, Spain does not import natural gas from Russia at all, whereas the dependence of the Baltic States, Poland, Finland and Bulgaria is extremely high. Consequently, the further institutionalisation of natural gas relations with Russia may contribute to the security of supply in qualitative terms.

Nevertheless, according to the majority of western sources, Russia has traditionally been a reliable energy exporter. This does not hold true for Russia's deliveries to the former socialist countries in general, and to the former member state of the Soviet Union in particular. From 1991 to 2005 the Swedish Defence Research Agency identified 55 incidents of a coercive nature that Russia undertook against countries of the former Soviet Union (Hedenskog – Larsson, 2007). The major part of these incidents took place in the Yeltsin era and did no have an impact on Western Europe. It was difficult to separate political and economic motives in these incidents. Significant restrictions took place in early 2006 against the Ukraine and Belarus and early 2009 against the Ukraine that affected Europe very much. These restrictions might have aroused fears that Russia could use natural gas exports to gain political leverage. Nevertheless, disruption in the natural gas supply of Europe was a by-product of a conflict between East European countries.

Based on thorough inquiries in the subject including relevant statistical figures, some experts arrived at the conclusion that Russia's external energy policy is motivated by a combination of political, economic and commercial factors (Christie, 2007, 30). As far as political and commercial motivations are concerned, Christie (2007) points out that Russia's fossil energy sources are natural monopolies and the Russian state is interested in the control of its natural resources including exports. The Russian government uses the commercial policies of its energy companies to promote its national interests. As regards the economic motives, the profit component is of vital and increasing interest for Russia, particularly in the long-term. One of the major reasons for this is the enormous difference between domestic and world market prices. In Russia domestic natural gas prices are not base on market principles. Gazprom, the government controlled natural gas monopoly had to sell natural gas to domestic consumers at a price of $ 60 per thousand cubic meters in autumn 2008 when export prices were above $ 500. Because of low domestic prices the lion's share of Gazprom's profits comes from export sales that account for only 30 % of the total. On the other hand, the European Union is the largest market of Russian natural gas. The

Russian Government appears to bolster and promote Gazprom's downstream penetration in the EU and in the former Soviet republics as well mainly because of profit considerations. With the decline of energy prices as a consequence of the global recession profit motivations tend to prevail even more.

Russia's natural gas exports are transported to European consumers by pipelines built through transit countries such as the Ukraine and Belarus. The security of supply is affected by the behaviour of the transit countries as well. The Nord Stream project under construction will connect Germany and Russia through the Baltic Sea. One of its objectives was to reduce risks related to natural gas transit by circumventing politically unreliable transit countries (the Ukraine, Belarus). The situation is more complicated in the southern part of Europe. As it is well-known, the South Stream pipeline project was initiated by Russia to connect the natural gas resources of the Caspian region and the Middle East with Europe. The Nabucco project was launched by companies registered in the European Union and is considered as an EU project.

The discussion of the details of the two projects (costs, participating countries, the availability of natural gas sources, etc.) is beyond the scope of this paper. The Russian project certainly eliminates the transit risks related to the Ukraine and Belarus, but it does not affect the source, since Russian natural gas will be fed into the pipeline. The Nabucco plan aims at the geographical diversification of European imports, since the source countries will be different from Russia. It is another question whether Azerbaijan, Kazakhstan and Turkmenistan will have the necessary volume of gas to feed the pipeline, since these countries account for less than 1.5 % of the world's proved gas reserves each. One of the possible conclusions may be that Nabucco will not be built unless it is also intended to carry Russian or Iranian gas or both (Mandill, 2008, 23). With significant Russian involvement the Nabucco project will not reduce the EU's dependence on the sources country. The investigation of this issue is beyond the scope of this paper.

Nevertheless, these pipeline projects may reduce transit risks, but they will not eliminate them completely. Being both a consumer and a transit country, Turkey plays a very important role in this context. Turkey intends to take over the role of a hub, which means that it would buy gas arriving within its borders, consume what it needs and sell on the balance at a profit to consumer. This is incompatible with the role of a transit country as defined in the Energy Charter Treaty (ECT), which was ratified by

Turkey (Mandil, 2008, 25; for details on the ECT, see Konoplyanik, 2008b). According to the ECT, transit is a service for the transportation via one's national territory of gas based on a toll as remuneration that does not belong to the transit county. According to Mandil (2008), the intention of Turkey to become a hub is justified if the envisaged purchase and resale business does not relate to long-term contracts signed between a supplier (e.g., SOCAR in Baku) and a customer (e.g. Gaz de France or ENI in Italy). Turkey may exploit the possibilities tied to its geographical location as a hub or transit country in the negotiations on EU membership.

Having in mind these factors, the next part of the article discusses the possibilities of improving the legal and institutional framework of energy relations between the EU and Russia. Before doing so it should be noted that liquefied natural gas has the important advantage that there are no transit countries. Natural gas is delivered directly from the source country to the consumer one. This specific advantage may be neutralised by other ones like limited availability, higher price and strong competition by Asian countries in general and Japan in particular.

The legal framework

Regarding the legal framework of relations between the EU and Russia in the energy sector, three options should be dealt with at least in principle. The first option is the extension of Community law to third countries, more specifically to Russia, the second one is the Energy Charter Treaty itself, the third one is the incorporation of certain principles and provisions of the Energy Charter Treaty in the new EU-Russia Partnerships and Co-operation Agreement (Konoplyanik, 2008a).

Since the declaration of the accomplishment of the single European market as of 1 January 1993 the European Community has continuously tried to extend the acquis communautaire to other European countries in order to harmonise the general legal economic framework. The first step in this direction was the establishment of the European Economic Space in 1992 with EFTA countries that had not joined the European Communities. Later the harmonisation of legal rules relating to the economy took place in the central and eastern European applicant countries. The process was accomplished by the accession of these countries to the EU in 2004 and 2007, respectively. Legal harmonisation, too, occupies an important part in the future enlargement toward the Western Balkans and in the European neighbourhood policy of

the EU that covers the Ukraine and Belarus as well. However, large natural gas exporters are likely to remain outside the legal system and legal influence of the European Union.

As far as relations between Russia and the EU are concerned, the parties may apply the principle of reciprocity in their bilateral relations in general and in energy relations in particular, at least in theory. The application of this principle aims at the elimination of certain regulatory asymmetries. Russian companies are allowed to invest in the downstream sectors of the EU countries (transmission, storage facilities, etc.) and acquire there controlling interest or majority stakes. On the other hand, western companies may not do the same in Russia. It is unlikely that Russia would permit upstream and downstream investments of western companies. In this case the EU may feel it appropriate to restrict the downstream penetration of Russian companies. A special case is the issue of the acquisition of non-controlling interests or minority stakes. The question here is how Russia interprets its own laws and decrees: it observes them as a norm or handles them selectively like in the case of Shell and BP.

In order to protect the energy market from controlling stakes, then trade commissioner Peter Mandelson proposed the introduction of the golden share that would have ensured its owners special rights under certain conditions to defend energy companies from take-overs (by Russian and Chinese state-owned firms). Following long debates, this proposal was rejected, and EU member states agreed in October 2008 that they remain free to allow foreign bidders entering their markets, but at the same time they have to observe the security of energy supply in the EU and consult with the European Commission (Goldirova, 2008). In contrast to the original suggestions, national regulatory authorities do not have mandates for the defence of the EU market.

One of the most important objectives of the European Commission is the promotion of competition in the single energy market. The major means to achieve this objective is unbundling, i.e. the separation of production and other activities related to supply from the transmission and distribution of energy. The Commission wants to generate more competition among distribution companies and thereby promote investments in the transmission network. According to the assessment of the Commission, investments directed into the transmission network are insufficient when vertically-integrated companies have dominant positions in the market. Unbundling meant in the original proposal ownership unbundling to prevent companies with stakes in transmission of

gas and electricity from being involved in energy generation or supply at the same time. The fine-tuned version of this proposal was a possible derogation in the form of an independent system operator underpinned by more power to be delegated to national regulators and strong co-operation among national regulators and the establishment of a common regulatory authority (European Commission, 2009). Unbundling would have pertained to companies of third countries as well. This provision was considered as targeted at Russia's Gazprom. Under the pressure of EU countries with strong vertically integrated energy companies, in June 2008 the EU energy ministers agreed that vertically-integrated companies may retain ownership of pipelines (and grids) provided they run them as strictly separate businesses. This compromise was vetoed by the European Parliament. Another proposal aimed at the amendment of Regulation 1775/2005/EC on conditions or access to the natural gas transmission networks (European Commission, 2007).

Energy companies of third countries in general, those of Russia in particular are unwilling to accomplish unbundling. Furthermore, they do not want to grant mandatory third-party access to their energy infrastructure because this can make project financing more difficult or even inhibit it, but they insist on negotiated third-party access as it was the general practice prior to the adoption of the Second Gas Directive in 2003. They also point out that capital-intensive energy infrastructure projects in the EU are financed on the basis of derogation from mandatory third-party access (Konoplyanik, 2008a, 110), at leas during the period of the return of capital invested or during a certain part of the capital return period.

The Second Strategic Energy Review focuses on additional aspects of the security of energy supply such as solidarity among member states in the energy sector and the interconnection of pipelines and grids of member states. The assumption behind interconnection is the recognition that the vulnerability of the EU in energy supply is lower than that of its individual member states. Vulnerability can be reduced if member states connect their transmission systems and strengthen solidarity among them. The interconnection of the transmission systems certainly diminishes the vulnerability of member states with the highest degree of import dependency (Christie, 2007, 48). E.g., Bulgaria was one of the most seriously hit victim of the Russian-Ukrainian energy dispute early 2009 because the country was tied exclusively to the Ukrainian natural gas network.

The second option concerning the institutionalisation of relations between the EU and Russia is based on the Energy Charter Treaty. As it is well-known, Russia had signed the ECT in 1994, but it failed to ratify it, although it has applied some of its provisions and it has been involved in the Energy Treaty process. Russia's major concern about the ECT relates to the EU's unwillingness to apply the multilateral Transit Protocol within its own borders. The EU argues that only energy flows that cross the entire regional economic integration organisation area should be considered transit and not those that cross only the territory of individual member states (Konoplyanik, 2008a, 112).

As Konoplyanik (2008a) points out, in this case Russian natural gas deliveries e. g. to Germany or Italy through the territory of other EU member states would not constitute transit, thus Community legal rules would be applied to them rather than the ECT. According to the Russian standpoint, this would have an impact on Russia's long-term contracts with increasing commercial risks and possibly higher prices for western consumers. In addition, there are other less precisely specified Russian concerns over the ECT. Another Russian argument is that the transit protocol would apply to Russia, but not to Norway because it refused to ratify the ECT. Finally, the ECT purports to create the conditions for a competitive market, but where competition might be prejudicial to European suppliers it protects them (e.g., uranium enrichment services). At the same time Russia applies the dispute settlement system of the ECT voluntarily (Mandil, 2008, 19).

As far as the third option is concerned the Partnership and Co-operation Agreement (PCA) concluded in 1994 served the institutionalisation of relations between the EU and Russia. Since that time a rather sophisticated institutional framework emerged whose efficiency does not appear to be the highest. Negotiations started for the renewal of the PCA in June 2008 that stopped in August because of the Russian-Georgian conflict but they restarted in autumn of the same year, as indicated by the EU-Russia summit as of 14 November 2008. One of the most important objectives of the PCA is the elaboration of the legal framework of the common economic space. Energy is an essential part of the project. The EU and Russia began an Energy Dialogue in 2000 in order to formalise their energy relations.

Konoplyanik (2008a) argues that some of the ECT principles could be incorporated into the new EU-Russia Partnership and Co-operation Agreement. This view was

represented originally by Russian officials and their points were taken over later by people in the EU. According to Konoplyanik (2008a), the first major risk of this proposal is that two different standards may evolve since it was not clarified how ECT principles would be included in the EU-Russia PCA. Second, it is doubtful whether the remaining open issues relating to the ECT and the transit protocol could be solved.

As a matter of fact, the light at the end of the tunnel cannot be seen yet. Russian authorities do not seem to be enthusiastic at the ratification of the ECT saying that it is obsolete and unfair, since it was drafted at a time when Russia was rather weak. Nonetheless, with the fall of global energy prices Russia's bargaining power is declining and Russia may find itself in a similar situation as in the early 1990 when the ECT was negotiated. EU officials, too, consider the Energy Charter Treaty "dead".

Other institutional frames

The existence of the appropriate legal framework alone does not guarantee the security of supply automatically. The adequate legal background is the necessary but not sufficient precondition of the security of supply. E. g., the Ukraine ratified the Energy Charter Treaty but in January 2006 and January 2008 it did not observe its obligations deriving from the Treaty since it did not ensure transit flows of natural gas. The two cases indicate that the Energy Charter Treaty does not contain efficient sanctions against countries breaching its provisions. In the capacity of a transit country of Russian natural gas, the Ukraine enjoys a monopoly position on which it can capitalise in the future as well.

In the context of the Russian–Ukrainian gas dispute some experts (at least in Hungary) maintained the view that as soon as the transition from subsidised prices to world market ones is accomplished in trade of natural gas between Russia and the Ukraine, quarrels will fade away. This is not sure because the transition to world market prices is not a solution to the problem that the Ukraine can tap Russian gas deliveries to Europe. For the time being no appropriate regulatory mechanisms are on the horizon that could sanction transit countries breaching their contractual commitments.

As regards the transit through the Ukraine, the dispute with Russia came to a solution when in a deadlock situation one side thought it was loosing the PR war. Neither country has enough material leverage over the other to force a deal. Russia controls

production and transit from central Asia whereas the Ukraine has exclusive influence over transit to Europe (Wilson, 2009). A possible solution to the problem could be that the transit pipeline that remained in Ukrainian ownership would be run by a tripartite consortium on the basis of a long-term lease (30 years of more) and an international treaty would establish clear rules for transparency, longer-term price deals, supply reliability and dispute settlement (Wilson, 2009).

The latest Russian-Ukrainian conflict over natural gas can be analysed from a different point of view as well. The stake of the conflict was not the price of gas but rather the strengthening of the position of certain intermediaries. Until recently the general perception in the OECD countries was the assumption that countries whose institutional systems were different from those of the fully fledged market economies were reliable suppliers of hydrocarbons in spite of the lack of transparency in their economies in general and in their energy sector in particular. As far as Russia and the Ukraine are concerned more transparency is required to learn who controls energy flows and who benefits from them. If this kind of information is missing, risks related to the disruption of supply cannot be understood and evaluated properly.

In the case of the Ukraine the intermediary is RosUkrEnergo a company registered in Switzerland in which Gazprom has a 50-%-stake. The other 50 % of equity is owned by two Ukrainian shareholders who are private persons. The company was established on the basis of an agreement between two sovereign states (Russia and the Ukraine), but the Ukraine is not a shareholder. The company produces post-tax profits of $ 800 million a year although it would be interesting to know what it does in gas trade that could not be performed by Gazprom (O'Sulivan – Mayne, 2009). According to the latest information, Gazprom wants to exclude RosUkrEnergo from Russian-Ukrainian natural gas trade (Olearchuk – Wagstyl, 2009).

The issue of transparency goes beyond the Ukraine. Risks related to the lack of transparency are considerable in the case of African and Asian suppliers (particularly in Nigeria). Therefore, the EU should deploy its regulatory power to ensure that companies involved in energy deals or other type of businesses with the EU being subject to strict disclosure requirements, and meet basic international standards of governance (O'Sulivan – Mayne, 2009).

The further institutionalisation of energy relations between the EU and Russia is inhibited by conflicts of interest as well. The EU is interested is the depolitisation of natural gas deliveries so that it could integrate natural gas imports from Russia into its competitive market, thereby maximise imports. In contrast to this, Russia-at least its present leadership-has keen interest in maintaining the present situation of politicised natural gas relations. Russia's priority is to avoid the depolitisation of gas trade even if the costs are significant in terms of declining volumes (Noël, 2008, 2). The politicised gas relationship may be one of the reasons why Russia has not ratified the ECT yet, and an explanation for the failure of the energy dialogue of the late 1990's (Noël, 2008, 2).

In addition, Russia's foreign policy and external energy strategy have traditionally tried to divide EU member states. Gazprom negotiated with energy companies registered in the EU on bilateral basis and concluded with them long-term bilateral contracts in which the Russian firm fixed the terms of deliveries, prices and the principles of price formation. These contracts are advantageous for Russia since thereby it is potentially possible to apply monopoly prices. Russia's bargaining power vis-à-vis individual EU member states is much greater than that deployable in negotiates with the EU as a unit. In 2006 energy companies of the largest importing countries of Russian natural gas (Germany, Italy, France) renewed their long-term bilateral contracts with Gazprom until 2026-2036.

It is fragmented EU natural gas markets that have made possible the establishment and the subsequent development of bilateral relations. The potential of political leverage, too, is based on segmented markets. OPEC is not a useful analogy in this respect. Countries importing crude oil form OPEC are fully aware of the fact that beyond a certain point political relations to large exporters do not have a great impact on the conditions of supply. With the globalisation of the crude oil market, if disruptions occur in bilateral trade relations caused by technical or political factors, the market transforms local supply shortages to global price rise. Therefore, the role of OPEC for importing countries is an economic issue rather than a geopolitical one (Noël, 2008, 8).

Because of the fragmentation of the natural gas market of the EU and deficiencies in competition, his argumentation does not hold true for gas relations between Russia and the EU. Within the EU there is a huge difference between the old member states

with large and diversified markets depending less from Russian deliveries and the new ones with much smaller markets but with a high degree of dependency on Russian imports. It is the fragmentation of the natural gas market why it is very difficult to elaborate a common energy policy for the EU whereas it is rather easy for Russia to divide the EU member states and play out against each other (Noël, 2008, 9).

Summary and conclusions

The natural gas supply of the European Union depends to a large extent on imports from and through countries whose institutional system is not fully compatible with that of the European Union. With the specific features of the world-wide distribution of proved natural gas reserves, this dependency is likely to grow in the long term highlighting the limits of geographical diversification in imports in qualitative terms from the point of view of the security of natural gas supply. Dependence on Russia, the major supplying country can be reduced-at least in principle-but there is no guarantee that the alternative source and transit countries would be more reliable and less risky in legal and institutional terms than Russia. Under these conditions the importance of qualitative factors-including institutional ones-of natural gas supply will increase not only in the EU's energy relations with Russia but with other third countries as well.

Although following the transition to market economy a rather sophisticated institutionalised system evolved in EU-Russia relations, this does not work too well in the energy sector. At present it is difficult if not impossible to predict the outcome of EU-Russia negotiations concerning new institutional solutions on natural gas. It is clear that Russia is unwilling to accomplish legal harmonisation on the basis of the acquis communautaire partly because the Russian institutional and regulatory system is incompatible with that of the EU, partly because of political reasons.

On the part of the European Union the depolitisation of EU-Russia relations in the natural gas sector seems to be reasonable strategy. The first, direct pillar of this strategy is focused on external economic policy. Proposals concerning discriminatory reciprocity clauses and ideas raising Russian concerns over political leverage will certainly inhibit progress in bilateral negotiations. The economic interests of Russia should be considered by the EU more than in the past, also by underlining the interdependence of the parties in the natural gas sector. Nevertheless, due to the

fragmentation of its natural gas market, the EU cannot “speak with one voice” in natural gas matters.

The second, indirect pillar of a depoliticised strategy is constituted by the accomplishment of the single natural gas market in the EU by the interconnection of the individual markets of the member states aiming at the elimination of fragmentation and by the introduction of the third gas directive including unbundling, etc. as argued by Noël (2008). The major limits of this strategy have nothing to do with external economic relations, they are associated with internal EU matters. With the emergence of a competitive natural gas market in the EU and the subsequent reduction of dependency on external supply both at the level of the EU and its most exposed member states, the possibilities of exerting political pressure by Russia are expected to diminish over time, whereas the conditions of the emergence of a coherent energy policy may be brought about at the same time. These issues are more or less independent form large scale projects, such as Nord Stream or Nabucco. Nevertheless, based on energy demand forecast, such projects will be essential to ensure the supply of natural gas in the EU.

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Energy security in Europe in the aftermath of 2009 Russia-Ukraine gas crisis

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Contents

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Introduction

Energy security re-emerged as a high priority international problem for the European community in 2005, reflected in the anxiety shown by the European Council about Russian reliability as energy supplier. Such concerns were highlighted already by the gas dispute between Russia and Ukraine during the winter of 2005-2006, repeated by the oil dispute between Russia and Belarus during the winter of 2006-2007, and culminated in January 2009 with the most serious crisis and gas supply cuts to date. The 2009 events, widely interpreted against the background of Russia's re-emergence on the global economic and policy arena and the vulnerability of Europe to Russian political pressure because of Europe's energy dependence on Russia, have effectively focused European attention to the political dimension of energy trade.

At the same time, there are deepening concerns about the scale and availability of remaining hydrocarbon supplies. In particular, the European attention has focused on whether Russian oil and gas production would be able to meet the growing European needs. These concerns are underlined by the currently diminishing Russian gas production, the urgent need to develop new infrastructure and gas projects in Russia and the inefficiency of implementing the projects by Russia's leading gas company, Gazprom. The growing tension between energy supply and demand has raised increasing questions about Russia's ability to simultaneously meet the rising domestic demand and the supply terms its external contracts.

The gas crisis between Russia and Ukraine in January 2009 has been by far the most serious of its kind with potentially far-reaching consequences for EU-Russia energy relations and the energy security of the EU. During the crisis, Russian exports to Ukraine were cut off on 1 January and to 16 EU Member States on 7 January, recovering only two weeks later and causing major economic and humanitarian emergency in the Balkan countries in particular. From the European perspective, both Russia's reputation as an energy supplier to Europe as well as Ukraine's reputation as an energy transit country were seriously damaged. As a result of the crisis, the EU's efforts to diversify away from Russian gas supplies, can be expected to notably intensify. The gas infrastructure projects bypassing Ukraine (and Belarus) as transit countries, notably the North Stream and South Stream pipelines, are likely to gain further political support in the EU. In addition, as implied by the strategic partnership agreement between the EU and Ukraine in March 2009, further restructuring of the Ukrainian gas sector can also be expected.

The current article aims to outline some topical issues of the EU's energy security against the background of the 2009 Russia-Ukraine gas crisis. The focus of this article is thus on the outcomes and consequences of the crisis with limited analysis of its origins and political backgrounds.

Russia-Ukraine gas relations – a brief review

Ukraine is the largest single importer of Russian gas, importing some 50-55 billion cubic meters (bcm) per year. Most importantly, Ukraine is also the main transit country for Russia's gas exports to Europe, accounting for about 80 % of total transit.

Following more than a decade of relatively chaotic relations between Russia and Ukraine in the gas trading sphere, the first major dispute between the two countries was witnessed in January 2006, concerning both gas prices and the gas import and transit terms. Before January 2009, this dispute was however the only instance when Russian supplies European countries were significantly diminished. However, the gas supplies were never completely cut off, and in most end user countries the effects remained relatively modest. The 2006 crisis however ended the practice of barter deals that had characterised Russian and Ukrainian gas trade since 1991, and introduced larger transparency and market mechanisms to the gas trade between the countries. However, Gazprom and Russia failed to introduce European market prices to the trade with Ukraine at this point as they would have put an unbearable economic burden on Ukraine and probably resulted in repeated supply disruptions as the Ukrainian government was prepared to use its strong transit position in the bargaining process with Russia.

During the 2009 crisis, the performance of Russia and Gazprom's was considerably strengthened in comparison to 2006. Already in December 2008, warned Europe of the possibility of reduced gas supplies through Ukraine due to the mounting debts of the latter and missing transit contract between the two countries. At the same time, Gazprom systematically denied it was using energy as a political weapon and accused the Ukrainian government to bear the ultimate responsibility for the crisis. In particular, Russia and Gazprom referred to the power struggle between the Ukrainian President Yushchenko and the Prime Minister Timoshenko, as a major source of the crisis. Apart from the apparent damage caused by Ukraine's internal political disputes to deepen the crisis, Russia itself played equally important role in widening and prolonging the

dispute. In particular, Russia made the issue of technical gas (a relatively small amount of gas used to operate the Ukrainian transit system, which Russia claimed was stolen by Ukraine and not compensated) eventually as a major pretext for supply cuts thus escalating the dispute and leading to serious disruption of supplies to Europe.

Given the relatively small amount of this gas allegedly stolen (a fraction of total transit volumes), one may ask why Russia was willing to take the risk of losing hundreds of millions in European sales and irrevocably damaging its reputation as a reliable energy supplier to Europe. Eventually, the Russian actions presented a determination of pursuing its agenda of maintaining its political face and not giving in to Ukrainian (and European) claims no matter the substantially high stakes in play. This again raises the question of the relationship between political and economic factors in Russian and external gas trade. Regardless whether the underlying motivations were to politically overrule Ukraine or to promote its gas infrastructure projects bypassing Ukraine, Russia's actions during the 2009 crisis presented a considerably changed attitude towards using its economic and political force to advance its international policy agenda.

Implications of the 2009 crisis for Russia and Europe

As a result of the 2009 crisis, the author argues that Gazprom's reputation as a reliable energy supplier has been irreparably damaged. It is likely that the EU will not anymore be overly interested in the rootening of the crisis itself but be increasingly concerned by its outcomes. As a major part of European citizens were directly and seriously affected by the disruption, the main lesson learned from the crisis should be that under prevailing geopolitical realities, Russia and Ukraine are not reliable suppliers of gas, forcing Europe to advance is search for alternative supply options. As Gazprom and Ukraine failed their legal obligations to deliver gas to Europe for two weeks, there is currently no guarantee that these events will not be repeated. These considerations lead to the need by Gazprom to re-establish its reliability as a gas supplier to Europe, which would require either establishment of new infrastructure or, in the shorter term, reformulation of transit operations through Ukraine to introduce greater transparency both in technical and legal aspects of the operations. Both of the options, however, require considerable time and capital to implement.

For Europe, the short term implications are likely to involve increasing need for establishing closer connections with alternative (mostly LNG) suppliers that could cover a at least a small part of Europe's current demand. In the medium term of 5-6 years, the presently planned infrastructure projects bypassing Ukraine could provide a part of the solution. However, the key question for Europe regarding the new pipelines is whether the alternative routes would actually provide the answer for long-term energy security threats, i.e. whether the problem of Russia's supplies to Europe actually relies within the relations between Russia and the EU and not so much in the relations between Russia and the transit countries. Regarding the Nabucco pipeline, which could provide supplies to Europe independent from Russia, its prospective looks increasingly dim as there is an evident lack of even theoretical supplies to the 30 bcm / year pipeline from sources other than Russia. Moreover, most of the European countries still have long-term import contracts with Gazprom, reaching as far as 2025 and 2030 that present the obligation to buy gas from Russia even under the (current) conditions of diminishing demand. The current economic crisis has thus caused increasing headache for European consumers to meet their "take or pay" obligations towards Russia, making it even more difficult to secure additional capital for developing alternative supply routes.

The 2009 Russia-Ukraine crisis was a key deteriorating event in Russian gas relations with CIS countries and Europe, and a landmark energy security crisis which is likely have far-reaching policy consequences. In the aftermath of the Russia-Ukraine gas crisis, there has been increasing discussion in Europe regarding the need for diversification of energy imports, mostly meaning not only diversification of supply routes but also diversification away from Russia as a supplier.

Probably the major shock for Europe was that Russia (and Ukraine) let the dispute to escalate from that over prices and transit tariffs to major suffering of European consumers in the middle of the winter. As much as one would like to believe that the much publicised policy of Russia to use energy as an economic or political weapon against Europe and the CIS countries has not played a major role in many aspects of Russia's external energy relations and the EU-Russia energy relations will remain those of mutual interdependence, we are bound to note considerable change in Russia's agenda in dealing with both Ukraine and the European customers as compared with the 2006 crisis. The ultimate decision by Russia to cut gas supplies deliveries cannot be regarded anything other but an irrational and risky action from the

European viewpoint, despite the fact that Russia relies heavily on the revenues generated from its sales to Europe. The key motivation behind Russia's action in the crisis can thus be interpreted as its willingness draw the European nations into the dispute over the Ukrainian gas transit issues, with an ultimate aim to support its infrastructure and policy agenda regarding the transit via Ukraine and development of alternative supply routes.

Regardless which party is considered to bear the key responsibility for the supply disruptions, neither Russia nor Ukraine showed major concern over the damage the crisis was causing to the European customers and Russia's (and Ukraine's) long-term relationships with Europe. By allowing the crisis to escalate, Gazprom lost around $ 1.5-2 billion of revenues due to the cut in sales to Europe in addition to the non-measurable damage done to its supply relations with Europe. The same goes for Ukraine, which can hardly perceived as a reliable transit country for Europe, especially given the ongoing political arm-wrestling in the country.

Conclusions

Most likely, the crisis has increased both European and Russian determination to reduce the transit dependence on Ukraine by constructing the Nord Stream and South Stream pipelines. For Ukraine as a country in notably difficult economic situation and heavily dependent on its transit revenues, this is hardly a desired outcome. However, what is significant from the perspectives of the European consumers, the next 3 to 5 years will continue to see their heavy dependence on the Russia-Ukraine relationship and gas transit, which is a major policy concern given the strong likelihood of further problems in economic and political relations. Moreover, European companies have long term contracts for the import of Russian gas, most of which stretch beyond 15-25 years with no legal pretext for significantly reducing volumes under these contracts. Most notably, very little can be achieved in terms of diversification away from Russian gas over the next few years. Regarding the diversification of delivery routes away from Ukraine through Nord Stream and South Stream can be foreseen around 2015 at earliest. If one assumes the key issue behind the dispute to have been the Russia-Ukraine relations, the new infrastructure projects could substantially reduce the significance of their bilateral relations for European customers and, hence, to improve the European energy security. However, in case the Russian actions and energy policymaking are seen as the key problem causing the recent crisis, the additional

supply routes are far less relevant for the security of European consumers. In the longer term of over the next 10-20 years, European customers and governments will likely have increasing options in relation to from where their (additional) gas supplies are sourced from. Along with the development of new energy technologies, it is likely that these choices will include alternatives other than gas. Additionally, the potential that gas from other sources than Russia via the routes that bypass Russia would grew should the EU be able to negotiate closer terms of co-operation with other CIS and Middle-East producers.

In general, Europe has already acknowledged that Russia may not be able to meet the increase in the EU's demand. And the EU must therefore seek other sources to satisfy a growth in demand at least in the longer term (the current economic crisis has resulted in considerably decreasing gas consumption among the industrial customers in particular). In addition, and not least due to the recently witnessed supply crisis, Europe has called for diversification away from Russia in reaction to potential political unreliability and Russia's increasing control over both energy resources and infrastructure in the CIS.

An aggressive diversification away from Russia, however, holds the threat of creating yet a new energy security dilemma in relations between the EU and Russia. By stating a desire to diversify, the EU undermines confidence in Russia as a producer, facing the question of why to develop the energy resources if, simultaneously its major customer is taking the efforts to find alternative sources for its energy needs. As a result, Russia is likely to advance its already strong efforts to seek alternative markets for its output, creating a vicious circle. Another key question for Europe in this context is, whether there are any realistic options for alternative suppliers which would be even slightly more reliable than Russia.

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Nord Stream - A solution or challenge for the EU?

Bendik Solum Whist [93]

Contents

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Introduction

The past decade has seen an increased focus on energy-related issues. Instability in petroleum-abundant regions, skyrocketing commodity prices, and concerns about CO_2 emission levels are all factors that have contributed to the trend. The global financial crisis, which shook the world in 2008 and continues to define the international agenda, should also be considered a factor in the equation, in that much-needed investments have become more difficult to bring about (e.g. in renewable sources of energy). The current state of affairs has led some to speak of a "*new cold war*" over increasingly scarce commodities (Follath and Jung 2006; Lucas 2008; SvD 2007a), and there is little doubt that energy-related issues are on top of the international agenda. In this context, the EU has a growing need for external energy supplies and increased diversification of supply routes. There are several reasons for the increased focus on energy security in the EU, but the 2006 and 2009 gas disputes between Russian Gazprom and the Ukraine have undoubtedly served as catalysts.[94] Approximately 80 % of Russia's gas exports to European markets flows through the Ukraine, and when Gazprom on 1 January 2006 reduced the supply levels to the Ukraine, this also affected Western Europe. According to the International Energy Agency (IEA 2006a, 88) "*about 100 mcm [million cubic metres] that was expected in countries west of Ukraine was not delivered. In addition, Ukraine itself suffered a shortfall of 150 mcm.*" Although the supply interruption only lasted three days and was relatively easily coped with through fuel switching, the interruptions had caused broad concerns in Europe regarding energy security (Stern 2006, 13; EIA 2008, 88). The most recent (January 2009) conflict between the two parties did not represent something new but most certainly served as a reminder that the EU faces important challenges in terms of energy security.

One of the proposed new supply routes to Europe that have become the subject of increased discussion (partly) as a result of the Russo-Ukrainian energy disputes, is the Nord Stream gas pipeline from Russia to Germany through the Baltic Sea. According to its proponents Nord Stream is a European-scale project that represents an important step on the way towards more security of supply for the European Union. Unfortunately for the backers of the project, however, this view has been highly contested within the EU, where some of the new members have accused Germany of putting its own interests above those of other member states.

[94] Neither of the two disputes will be reviewed in depth here. For a thorough analysis of the Russian-Ukrainian gas conflicts, see Stern (2006) and Pirani, Stern and Yafimava (2009).

At a conference in Brussels in May 2006, the Polish Minister of Defence, Radoslaw Sikorski, went so far as to compare the project with the Molotov-Ribbentrop Pact of 1939, which effectively divided Poland between Germany and the Soviet Union (Godzimirski 2007, 13). Similarly, Vytautas Landsbergis, former Lithuanian president and currently Member of the European Parliament, has called the project a Russo-German pact and argued that Russo-German cooperation, throughout history, has always led to problems for the countries between them (SvD 2005).

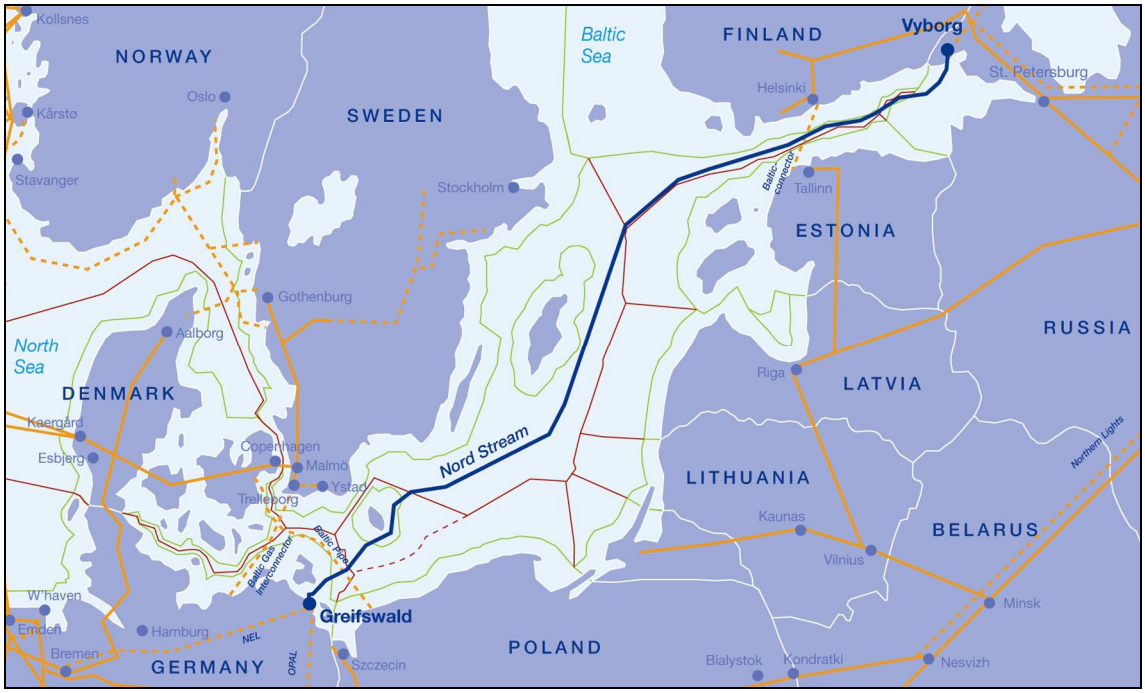
This article seeks to explain why the Nord Stream project has become such a contested issue within the EU. It will first provide a brief introduction to the hard facts of the project, followed by an exploration of the arguments being used by pipeline proponents, most notably Germany, Russia and the Nord Stream consortium. It will be discussed whether the European focus is only a way of legitimising the project and that the primary reason for the project's existence is that Germany is in dire need for more natural gas. A more historical and theoretical argument, often pushed forward by Germany, will also be assessed, namely that the EU-Russian relationship may benefit from the interdependence resulting from pipelines. The examination of the pro-pipeline arguments will be followed by an exploration of the criticism put forward by other EU-states, particularly in Eastern Europe, that Nord Stream divides Europe and strengthens Russia's leverage on the bypassed states. It will be discussed whether former Russian supply interruptions form a pattern, and if so, how Nord Stream could represent a threat to Eastern Europe (particularly the Baltic States). Finally, it will be argued that regardless of Moscow's foreign policy intentions, which are difficult to prove, the most serious threat to "*new EU's*" energy security is that Russia in the near future may not be able to produce enough gas to cover all of its export commitments, and this would be a bigger threat to small gas markets than to large ones like that of Germany. This, in turn, could pose serious challenges for the EU, which is currently working on the development of a more coherent and unitary energy policy based on intra-union solidarity.[95]

[95] This article will focus purely on the energy-related aspects of the Nord Stream pipeline. Several related issues, such as military-strategic implications of the project (a topic heavily debated in Sweden in 2006-2007) and environmental concerns in the Baltic Sea region, will have to be disregarded. For a more substantial analysis including these issues, see Whist (2008).

What is Nord Stream?

Nord Stream, formerly known as the North European Gas Pipeline (NEGP), is a planned 1200 km long dual pipeline for natural gas from Vyborg in Russia to Greifswald in Germany through the Baltic Sea. If constructed, Nord Stream will be among the longest offshore pipelines of the world, and will have the capacity to supply 55 billion cubic metres (bcm) of natural gas each year. The gas will originate in the already developed Yuzhno-Russkoye field, and, later on, in the Yamal Peninsula, Ob-Taz Bay and the Shtokmanovskoye (Shtokman) fields (Nord Stream 2008b).

Figure 1. Nord Stream pipeline route



Source: Nord Stream 2009b

The actors involved

In 1997 Russia's Gazprom and the Finnish company Neste (later known as Fortum) established a shared company, North Transgas Oy, to examine alternative gas pipeline routes from Russia to Germany through the Baltic Sea. Their 1998 feasibility study, which also included partly land-based routes through Finland and Sweden, concluded that an offshore project would have the best chance of implementation. German companies E.ON Ruhrgas and BASF/Wintershall became associated with the project through agreements of 2001 and 2004 respectively. In May 2005 Fortum withdrew from the project, presumably due to Gazprom's 2004 announcement that the offshore

Shtokman gas field would be used for LNG (liquefied natural gas) exports, which would make the Finnish part of the pipeline unnecessary (Riley 2008, 3). Nonetheless, in September 2005 Gazprom, E.ON Ruhrgas and BASF/Wintershall agreed to construct the North European Gas Pipeline. Present at the signing of the agreement were the then Russian President Vladimir Putin and German Chancellor Gerhard Schröder, both of whom had been proponents of the project (Tarnogórski 2006, 104). The North European Gas Pipeline Company, which is today known as Nord Stream AG, was incorporated in Zug, Switzerland, in November the same year with Gazprom as majority shareholder (51 %), and the two German companies with a 24.5-% stake each. North Transgas Oy was officially dissolved as soon as all information about the project had been transferred to the new firm (Nord Stream 2007a, 4). In November 2007, the Dutch gas company Gasunie bought a 9-% stake in the Nord Stream project, whilst each of the two German companies ceded 4.5 % of their share (leaving them with a 20-% share each). Gazprom thus remains the majority shareholder with its 51 % (Nord Stream 2007b). Former German Chancellor Schröder has, since 30 March 2006, been heading the shareholders' committee of Nord Stream AG (Süddeutsche Zeitung 2006c).

Technical features, timeframe and budget

Nord Stream will have two parallel legs, each of which will have an annual capacity of 27.5 bcm of natural gas. According to the original schedule, construction of the first leg was set to start in January 2008 and finish by February 2010. The second leg is scheduled for construction between 2011 and 2013. Nord Stream AG estimates that full capacity, 55 bcm per year, will be reached in 2013. The gas transmission system will have an estimated lifetime of 50 years, after which it will be decommissioned (Nord Stream 2006a, 2-3).

The cost of the Nord Stream project was initially (in 2005) estimated at € 4 billion, but the projected cost has gradually risen and is now (spring 2008) set to € 7.4 billion (Nord Stream 2008b; BarentsObserver 2008a). According to a spokesperson for BASF/Wintershall, the company assumed as early as 2006 that the cost could rise to as much as € 9 billion (Reuters 2007b). It should be noted that these estimates only cover construction costs. Operation-, maintenance- and decommissioning costs are not included, which means that the end total may become significantly higher (Larsson 2007, 34). Although the Schröder government, only weeks before the end of its term,

granted Gazprom a € 1-billion loan guarantee for the project (Süddeutsche Zeitung 2006d), the financial situation is still not settled. Financing can only be finalised when the final route of the pipeline is ready, which is subject to the consent of the coastal states involved. Nord Stream AG estimates that 30 % of the costs will be taken by the shareholders, and 70 % will be financed through loans and export credit agencies (Nord Stream 2008f).

Current state of affairs

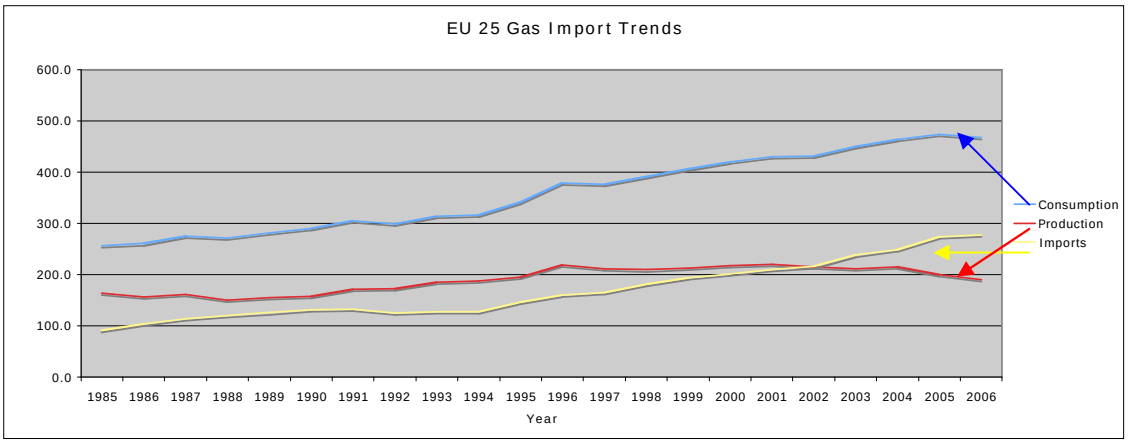
In April 2009 construction of the offshore pipes has yet to start, as no construction permits have been granted by the coastal states whose Exclusive Economic Zones will be used for the pipeline. The Swedish government rejected Nord Stream AG's first Environmental Impact Assessment (EIA) in February 2008 because it was considered incomplete, and only after further information was supplied (on 23 October 2008) was the review process initiated in Sweden. The final EIA reports concerning the pipeline stretches in German, Danish and Finnish waters were made available for public consultation on 12 December 2008, 9 March and 10 March 2009 respectively (Nord Stream 2009c). It is still uncertain when permission for construction will be given by the different states. The Russian onshore section, which is to connect to Nord Stream, has been under construction since December 2005 (Reuters 2008b; Gazprom 2005).

The pro-pipeline camp: Nord Stream means "gas for Europe"

According to Nord Stream AG, the planned pipeline through the Baltic will be one – if not *the* – answer to Europe's energy challenge. The official documentation states that "*it is evident that without Nord Stream, the EU will not be able to cover its gas needs. Therefore, Nord Stream is an important contribution to security of supply, as it will meet a quarter of additional import needs of Europe*" (Nord Stream 2008d).

Indeed, the development within the EU in the past 20 years shows a clear trend towards increasing import dependency. Whereas both demand and production grew until the mid-1990's, production has since stabilised, and from 2002 it has been declining, whilst the consumption level has kept rising (Figure 2). Gas imports as percentage of consumption rose from approximately 40 % in 1994 to almost 60 % in 2006 (BP 2007).

Figure 2. EU 25 gas import trends



Source: BP (2007)

A reference to historical developments, although serving a powerful rhetorical point, is not sufficient to warrant the building of a controversial pipeline, but projections of EU's gas import needs show a similar trend. As pointed out by Dieter Helm (2007, 13), "*Gas is the fuel of choice for electricity generation in Europe, and demand is projected to rise steadily over the next decade.*" Nord Stream AG, officially relying on data from the IEA, projects EU's annual gas demand to rise from 570 bcm in 2005 to 712 bcm in 2015. At the same time, EU's internal gas production is steadily declining, and, according to the company, the share of imported gas will rise from 57 % in 2005 to 75 % in 2015 (Nord Stream 2006b, 4, 2008a). The Nord Stream pipeline will thus be one answer to Europe's import challenge.

It should be noted, however, that the numbers referred to in the Nord Stream documentation do not fully correspond with IEA's World Energy Outlook 2006, according to which the annual gas demand in the EU will have risen to (only) 609 bcm by 2015. Not only is this significantly lower than 712 bcm, but, as pointed out by the Swedish defence analyst Robert Larsson (2007, 28), "*Nord Stream's material reveals that its analysis is based on IEA's so-called reference scenario … [which] is a "business-as-usual-scenario."' What the World Energy Outlook also includes, however, is an Alternative Policy Scenario, which 'analyses how the global energy market could evolve if countries were to adopt all of the policies they are currently considering … [including] efforts to improve efficiency in energy production and use, [and] increase reliance on non-fossil fuels*" (IEA 2006b, 161). According to this potential development, EU's annual gas demand may in fact be 38 bcm less in 2015 and 90 bcm less in 2030 than is projected in the reference scenario (Figure 3). Larsson (2007, 28) therefore

suggests that the Nord Stream pipeline may actually be superfluous, and that increasing the capacity of existing pipelines could in fact suffice to meet the increased demand.

Figure 3. EU natural gas demand (bcm/year) – IEA projections

	2004	2015	2030
Reference Scenario	508	609	726
Alternative Policy Scenario	508	571	636
Difference		38	90

Source: IEA 2006b, 112, 183

Regardless of the need to scrutinise the figures presented by Nord Stream AG, few seem to fully deny the need for increased gas supplies to the EU. In March 2006, the European Commission published its Green Paper on energy, A European Strategy for Sustainable, Competitive and Secure Energy, which acknowledged precisely that in terms of energy supply there are critical times ahead (EU Commission 2006a). Although not using labels such as 'new cold war' or 'war over natural resources,' the Green Paper clearly echoes many of the arguments put forward by Follath and Jung (2006) in Der neue Kalte Krieg. To handle the upcoming energy security challenges the Commission sees a need to take several important steps, of which one has proved especially useful as an argument for Nord Stream proponents: diversification of supply routes. Although this is but one point from an exhaustive list of steps the EU should take, it has nevertheless become a very central argument for the Nord Stream consortium, which posits that the new direct energy link between the EU and Russia is an important step on the way to increased route diversification and secure supplies (Nord Stream 2008g).

To underline this point, it is emphasised that the EU Commission has given the pipeline status as a priority project under the TEN-E guidelines (Trans-European Energy Network),[96] which are meant to help increase competitiveness in the energy market and increase security of supply. By giving priority to certain projects, the EU aims to "*accelerate the implementation and construction of connections and to increase the incentives for private investors*" (EU Commission 2006b, 2; 2007, 15). Thus, the TEN-E

[96] Although a "correct" abbreviation would be T-EEN, the abbreviation "TEN" is used for all Trans-European Networks, followed by a specification of network type, e.g. TEN-E for Energy, TEN-T for Transport, and so on.

status is inevitably important for a project of such a scale as Nord Stream, and according to the company website, "*The European Union appreciates Nord Stream as one of the priority energy projects of European interest. … This means that Nord Stream is a key project for sustainability and security of supply in Europe and must be supported by EU-member states*" (Nord Stream 2008e).

A few things should be noted, however: Although TEN-E status may be necessary to attract investors in an early phase, it is by no means sufficient and does not automatically imply that the pipeline will be constructed. Several commentators and officials have therefore criticised the Nord Stream consortium of distorting the facts when it refers to widespread EU support. As pointed out by the Swedish parliamentarian Carl B. Hamilton (2007, 24), "*that the project is on the TEN list does neither mean that a final decision for its realisation has been made, nor does it imply that a construction permit has been given.*" It should also be noted that the label 'project of European interest' under the TEN-E guidelines does not imply that all of Europe will benefit from it. In fact, many such priority projects are, and have been, more local or sub-regional (EU Commission 2006c). Finally, a senior official in the Energy Security Policy Division of the Lithuanian Ministry of Foreign Affairs (MFA) has underlined that:

"*TEN-E is support for a project, but it is not support for a concrete route. It can be built on land, and it would be the same project. … Nord Stream likes to mention that "this project is written, marked and underlined as TEN-E, to which all countries agreed," but again, the route can be slightly different, and it will solve a lot of problems*." (Lukoševičius, interview).

Nonetheless, Nord Stream is frequently promoted as a pan-European endeavour. During his first visit to Germany as Russian President, Dmitry Medvedev, stated that "*this project serves equally the interests of reliable energy supplies and energy security for all the countries on the European continent*" (RIA Novosti 2008a). Medvedev, not surprisingly, echoes his predecessor, current Prime Minister Putin, who on several occasions has made similar statements. The words could, however, just as well have come from former German Chancellor Schröder or his Chief of Cabinet, Frank-Walter Steinmeier, who currently serves as Minister of Foreign Affairs under Chancellor Angela Merkel in the grand coalition of Christian Democrats (CDU/CSU) and Social Democrats (SPD).[97] Both Schröder and Steinmeier have argued that Nord Stream is a

[97] The coalition was a result of the 2005 German federal election, after which none of the traditional "blocs" were able to form a majority government. Although the two biggest parties,

European-scale project, and underscored that it should be supported by all European states (Süddeutsche Zeitung 2006b, 2006e).

Many expected Merkel to have a different approach to this question than her predecessor; first of all because she has generally been less accommodating towards Russia, but also because she openly criticised Schröder for mixing roles when he started working for the pipeline consortium after approving the project as Chancellor. Nonetheless, Merkel has done little to satisfy those who criticise the Nord Stream project. During her first meeting with President Medvedev she underscored that her country would keep supporting Nord Stream, which she regarded as "*strategically important for the whole of Europe*" (RIA Novosti 2008b). At a conference about Nord Stream's implications for Europe in February 2007, Dr. Frank Umbach (2007, 12) from the German Council on Foreign Relations in Berlin pointed out that there are, in fact, several contradicting factors and policies within the Merkel government. Notwithstanding Merkel's criticism of Russia and Schröder, the German Nord Stream policy has not changed. Although this may seem surprising, the next subchapter will show that certain domestic forces make it difficult to expect otherwise.

Alternative explanation: Germany needs gas

No matter how much the EU's gas demand is to increase, one cannot escape the fact that Nord Stream will run ashore in Germany and that the bulk of the gas (at least that which has already been contracted) is earmarked for the German market (Nord Stream 2009a). According to the 2007 IEA review of Germany, the country's annual gas need was then approximately 92 bcm, of which only 20 % was of domestic origin. Russian gas supplies account for some 40 % of the total – a share that has been increasing in recent years (IEA 2007, 33, 93). Germany is indeed Russia's main partner among the old EU member states, and the annual volume of imported Russian gas, which was some 40 bcm in 2007, will within a few years exceed 50 bcm. According to Proedrou (2007, 345) there are two main reasons why this relationship is unlikely to change, the first of which is the Nord Stream pipeline. The second reason, he believes, is Gazprom's 2006 commitment to redirect the gas from the Shtokman field in the Barents Sea to the German market instead of the United States. It should be noted that the

SPD and CDU/CSU, had been the main competitors in the election, they ended up forming a grand coalition with Angela Merkel (CDU) as Chancellor. Important aspects regarding this government will be discussed in further detail shortly.

latter is a long-term plan, as the Shtokman field has yet to be developed. Although Gazprom (2008) claims the field will be operational in 2013, most analysts see this as highly optimistic and hold that the development may take at least 10-15 years (Riley 2008, 7; Godzimirski 2005, 27). Nevertheless, the trend towards increased German dependence on Russian gas is unlikely to change, and it is therefore important to assess if, and why, Germany accepts this development.

In 2000 the German government and energy utilities made an agreement to shut down all nuclear power stations as they age, reaching a complete shut-down of all plants by 2022. Today nuclear power accounts for some 12 % of the primary energy supply in Germany, and over 25 % of the electricity generation (EU Commission 2008). According to the IEA (2007, 8) "*the loss of nuclear power will lead to reduced supply diversity, negatively impacting energy security.*" Inasmuch as nuclear energy is a largely domestic resource, it reduces the need to import fossil fuels, such as natural gas. Germany's reliance on Gazprom is therefore likely to increase significantly as a result of the nuclear phase-out. Moreover, it is worth noting that in terms of emission levels, the nuclear shutdown brings serious challenges to Berlin. Even though increasing the use of renewables may help Germany cope with the emission dilemma, the IEA believes it is likely that the phase-out will lead to increased use of coal and gas, and hence, prevent Germany from reaching its emission goals. While gas is more environmentally friendly than coal, it is nonetheless a fossil fuel and not emission-free. Based on these considerations, the agency thus "*strongly encourage[s] the government to reconsider the decision to phase out nuclear power*" (IEA 2007, 9).

This dilemma has caused much debate within the grand coalition of the Christian Democrats (CDU/CSU) and the Social Democrats (SPD). It was the latter that, whilst in government with the Green Party, agreed on the nuclear phase-out, and the party still stands by its decision. CDU/CSU, however, has been somewhat critical of the plan, and this has inevitably led to tensions within the government on questions of dependence on Russia, what a climate-friendly energy mix should look like, and how electricity and gas prices can be kept low. Spiegel (2007a) concludes that on questions of energy "*the views of Merkel's Christian Democrats differ from those of the Social Democrats on virtually every important issue.*" If this was not discernible during the 2006 Russo-Ukrainian gas dispute, it became particularly apparent following the 8-10 January 2007 Russo-Belarusian energy dispute, during which Russia halted oil deliveries through the Druzhba-pipeline, which passes through Belarus and supplies

Germany with 20 % of its annual oil imports. The reason for the disruption of oil supplies was a commercial dispute between Moscow and Minsk, which was related to Russian export tariffs on oil to Belarus, and the transit fees demanded by the latter. On 9 January 2007, when the dispute was still unsettled, Chancellor Merkel stated that, first of all, it was "*not acceptable for energy transit or supplier countries to halt deliveries without consultation,*" and secondly, that '"*we must think about the consequences of shutting down nuclear power plants*" (Deutsche Welle 2007). As late as June 2008 Merkel reiterated this position and argued that "*the phase-out decision was absolutely wrong*" (WNN 2008a). The Chancellor's and CDU/CSU's problem, however, is that SPD will not budge on the phase-out plan. For instance, the relationship between the (former) Minister of Economics, Michael Glos (CSU), and Minister of the Environment, Sigmar Gabriel (SPD), has been described as "*an embittered small-scale war*" over energy issues within the government (Spiegel 2007a). Until now (April 2009) the German government has not changed its nuclear phase-out policy, and this may also help understand why Berlin's stance on Nord Stream has persisted despite Merkel's tougher line with Russia. In light of the effect that Russia's energy disputes with neighbouring transit states has had on Germany's perception of energy security, and considering the current improbability of a change in the nuclear phase-out plan, the pipeline through the Baltic Sea makes much sense.

Another contributing factor is the strong energy lobby in Germany. First, the two second-largest shareholders of the Nord Stream consortium, E.ON Ruhrgas and BASF/Wintershall, are both German companies, and they inevitably have a strong economic interest in the project. Second, Lucas (2008, 19) has argued that Germany indeed has a "*pro-Russian business lobby that has beguiled the foreign-policy establishment.*" Decades of trade and investment in Russia have made many German companies willing to go to great lengths to make sure Russo-German relations remain friction free. So even if Chancellor Merkel, for political reasons, wanted to lead Germany in another direction on the pipeline issue, she would find herself pressured by "*a strong business lobby that wants good relations with Russia no matter what*" (Lucas 2008, 189, 226).

In light of the above, Germany's own needs can hardly be trivialised when assessing the rationale behind, and arguments for, the Nord Stream pipeline. And even though there is a persistent European focus amongst pipeline proponents, one might ask whether Nord Stream would ever have left the drawing board had it not been for the

current energy dilemma facing Germany. Although certain factions within the German political sphere, as well as analysts outside Germany, are concerned about too much dependence on Russia, the current government deadlock makes Nord Stream stand out as a good solution. Furthermore, the dependence-argument is not a one-sided one, and the question of mutual dependence – or interdependence – has been central in this regard. The following subchapter will explore how the concept of interdependence can serve as a normative argument when discussing EU-Russia relations generally, and Nord Stream specifically.

Overarching assumption: Harmony through interdependence

In an October 2006 interview, President Putin was asked if he could understand the concern some Germans have about becoming too dependent on Russian gas supplies, to which he responded:

"*No, I don't understand that. It is artificially politicised. There are people that are trying to heat up this issue to gain from it politically. These people are either provocateurs or very stupid. I say this quite often, even if it sounds harsh. It is, however, the fact that when we have a common pipeline system, we are equally dependent on each other.*" (Süddeutsche Zeitung 2006a).

The interdependence argument is not a new one, neither with regard to gas transmission systems, nor related to trade in general. What Putin refers to in his statement is that pipelines, once constructed, are stationary and do not allow for the gas to be sent elsewhere on a short notice. Although Liquefied Natural Gas (LNG) can be quickly redirected, it is currently no competitor to pipeline gas over shorter distances. Because of the expensive liquefaction process, as well as the need for specially designed ships, LNG is only a real competitor to pipeline gas when the transportation distance is over 4000 km onshore, or 1500-2000 km for sub-sea pipelines (Kasekamp et al. 2006, 22). Furthermore, LNG currently only accounts for some 10 % of the global gas supplies, and it is not likely to compete with pipeline gas any time soon (Helm 2007, 15-16). Proedrou (2007, 343) has emphasised that EU-Russia energy relations are characterised by lack of feasible alternatives for both sides. About 50 % of all Russian energy exports go to the EU, which in turn has Russia as its decidedly most important supplier. In 2006, the EU imported some 33 % of its crude oil and 42 % of its natural gas from Russia. By comparison, the corresponding numbers for Norway, which is the second-largest exporter of oil and gas to the Union, were 16 % and 24 % (EU Commission 2008). Had Russia had the infrastructure in place to divert

its energy sources to the expanding markets in Asia, the EU would have had a better reason to worry. However, since this is currently not the case, Proedrou argues, "*Moscow has no other option but to sustain its energy trade with the EU … Any other option would entail a tremendous loss of income*" (an argument which may have become even stronger due to the current financial crisis).

Therefore, Putin may talk about mutual dependence stemming from the nature of pipelines, and from this viewpoint the Germans may have little reason to worry. This can be seen as a descriptive argument of interdependence, but there is also a normative one, which significantly predates the emergence of gas pipelines, namely that interdependence fosters peace. The idea that trade can create amicable relations amongst states is not new; it has existed for centuries and has been promoted by a wide range of thinkers and statesmen, such as Hugo Grotius, Baron de Montesquieu, Adam Smith and Richard Cobden. The notion is that trade creates a condition in which conflict becomes less likely because the parties involved gain more from the commerce than from any potential hostilities. In the words of Montesquieu, "*peace is the natural effect of trade*" (cited in Polachek 1997, 307).

As regards EU-Russian energy relations, the "*interdependence fosters peace*"-argument has been particularly popular in Germany. Foreign Minister Steinmeier, for instance, has asserted that Europe needs to deepen its energy and trade relations with Russia in order to ensure amicable relations. Not unlike Willy Brandt's Ostpolitik of the 1970s, the mantra seems to be "*engage Russia*" to create harmony (Rahr 2007, 141). Nord Stream, from this point of view, represents an important step along the way towards strengthened economic ties between the two parties, and hence, peaceful coexistence. Indeed, parallels have been drawn to the European integration process following the Second World War. In the words of the former Swedish ambassador to Russia, Sven Hirdman (interview), "*the more economic and industrial cooperation we have in Europe, the better. Nord Stream is comparable to the European Coal and Steel Community [ECSC] back in the days.*" And just as war between Germany and France is unlikely today, the assumption is that similar economic integration with Russia will reduce the chances of EU-Russian conflict.

Nonetheless, some have questioned the accuracy of the ECSC-analogy. Larsson (2007, 29), for instance, argues that since the Russo-German interdependence is quite asymmetric and Moscow is aiming at more independence, "*it is questionable whether it*

will be a security provider in the same way as the Coal and Steel Union in Europe was between Germany and France." It is of course central that there is balance in an interdependent relationship for it to promote entirely peaceful relations. As pointed out by Keohane and Nye (2000), any asymmetry may be exploited by the least dependent actor in order for him to gain more from the interdependence. This, in turn, means that interdependence may lead to both cooperation and conflict, but it is not always straightforward to assess which of these it will be (Proedrou 2007, 332). Thus, Larsson (interview) calls for European caution in the EU-Russian energy relationship. With regard to Nord Stream and the interdependence argument, he believes this is more a question of how one can legitimise such a project rhetorically. In reality, he holds, it is unlikely that German politicians believe that the Russo-German relationship is a completely balanced one. Moreover, Germany's position as a priority partner for Russia should not be exaggerated, especially in light of the Russo-Belarusian energy dispute, before which Moscow did not warn Berlin. Larsson sees this as an example that Germany is not shielded from potential problems with regard to Russian energy. Hirdman (interview), by contrast, does not believe that the asymmetry is so dangerous. Like Proedrou (2007), he focuses on the mutual dependence and lack of good alternatives for both sides, and argues:

"*It depends on how one sees Russia. If one believes that Russia is an aggressive actor that wants to turn off the gas supply to Europe, then, of course this is dangerous. But if one has another image of Russia, namely that it is a European state that is aiming at its economic and political development, and that is being globalised and modernised, then it is not that dangerous. We are always getting back to the "images of Russia.*" (Hirdman, interview).

The point about diverging images of Russia will be discussed in more depth below, but for now it is worth mentioning that such images are very much a result of different historical experiences, and the same can be said about the interdependence argument. Director of the Estonian Foreign Policy Institute, Andres Kasekamp (interview), underlines that from an Estonian point of view, the prospect of more EU dependence on Russia is a frightening one, and regarding the Germans' argument about interdependence, he asserts that:

"*Apparently this is some deep and grand way of thinking in the German foreign ministry … and it seems to me that we [Estonians] are accused of making our decisions based on our history, but … the Germans are also making their decisions based on their history. And the wrong history lesson that they are drawing on interdependence is that they see everything through the prism of the successful … reconciliation of Germany and France after World War II in Europe … And now they hope to overcome the differences with Russia by becoming more closely intertwined … But although this*

theory sounds nice, I think it has pretty serious flaws, not the least of all is that Vladimir Putin is not Konrad Adenauer." (Kasekamp, interview).

Thus, the interdependence argument may not only be a theoretical and a descriptive one, but also strongly embedded in the historical experiences of those using it. The Germans would probably not have used of the interdependence argument if their history had taught them that economic integration "*does not work*" or perhaps more importantly, if their historical energy relations with the Russians had been highly unstable. By and large, there have been few problems in Russo-Germany energy relations. The importance of this will be further highlighted in the next chapter, which analyses inter alia Russia's reliability as an energy supplier. The important issue here is that few, if any, of the EU members in Central- and Eastern Europe have an energy history with Moscow similar to that of Germany. On the contrary, their historical experiences have taught them that very few positive things derive from dependence on Moscow, and this is one of the reasons why they do not accept the interdependence argument for the EU as a whole.

The pipeline sceptics: Nord Stream divides Europe

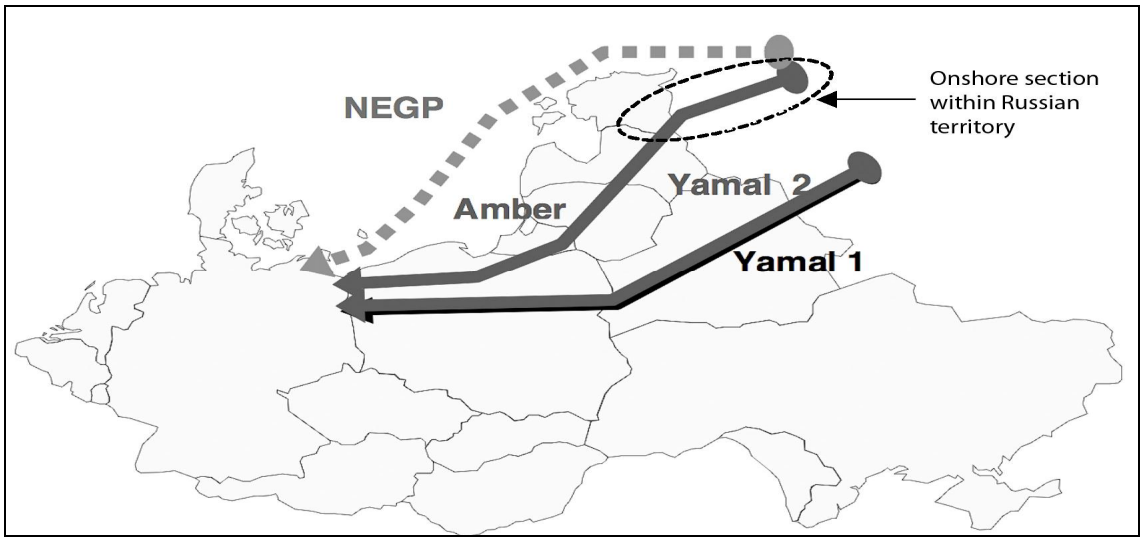
In his recent book, The New Cold War, Edward Lucas (2008, 218) states that "*though Nord Stream's backers insist that the project is business pure and simple, this would be easier to believe if it were more transparent.*" First, the pipeline consortium chose to be incorporated and have its base in Switzerland, whose strict banking secrecy laws makes the project less transparent than it would have been if based within the EU. Second, the Russian energy sector in general lacks transparency, and the majority shareholder of the Nord Stream consortium, Gazprom, is no exception. Larsson (2007, 32-33) points out that the Russian energy giant has "*a tradition of being related to rather dubious companies … [and that] Gazprom and Nord Stream could use shady subcontractors, intermediaries or subsidiaries (that may be registered offshore) and thereby dodge environmental or other responsibilities.*" Third, many have questioned the project's financial situation, which is still unsettled. As mentioned, the official estimated costs have gradually risen from an initial € 4 billion in 2005 to € 7.4 billion in April 2008, and according to Dr. Alan Riley (2008, 5-6) the costs may reach as much as € 12 billion "*given the increase in steel prices and energy services, operational costs, environmental requirements and seabed preparation.*"

The almost doubled price tag and the prospects of further cost increases, combined with Nord Stream AG's persistence that the project shall and will be implemented, has made opponents of Nord Stream question whether there are political motivations involved that trump the economic ones. Rhetorically, they are asking why an onshore solution, which may be considerably cheaper, has not been chosen. Indeed, even states that are officially positive towards the project, such as Finland, have asked why the consortium in its Environmental Impact Assessment (EIA) has not considered any land-based alternatives. In its answer to the consortium's Project Information Document of 2006, the Finnish Ministry of Foreign Affairs declared that:

"*The project's EIA programme and the affiliated "Project Information Document" only propose a so-called "0-alternative" or the alternative that no pipeline will be constructed as the alternative required by the EIA procedure. It would have been positive from the viewpoint of the EU solidary [sic] energy policy and development of the EU natural gas market to also take into account the interests of the other Baltic Sea states in planning of the project, either in the form of an alternative pipeline routing or in that of connections to any states interested*" (MFA Finland 2007, 1).

A similar critique and call for alternatives can be found in corresponding official documents from Estonia, Lithuania, Poland and Sweden, as well as in statements from several non-governmental agencies in the Baltic Sea region (MFA Estonia 2006, 1; MoE Lithuania 2007, 1-2; MoE Poland 2007, 2; SEPA 2007, 2; Nord Stream 2008k). There are mainly two alternatives that have been proposed in this regard, namely, the Yamal 2 pipeline and the so-called Amber pipeline, both of which are illustrated in Figure 4.

Figure 4. Alternative onshore routes – Yamal 2 and Amber



Source: Janeliunas & Molis (2005, 219). (Oval and "onshore section" text added)

The Yamal 1 pipeline currently brings natural gas from Russia via Belarus and Poland to Germany, and Yamal 2 is a proposed additional pipeline along the same route. Several commentators have claimed that this option would be considerably cheaper than the offshore pipeline in the Baltic Sea (Umbach 2007, 11; Riley 2008, 8); not only because laying an onshore pipeline is cheaper in itself, but also because the first Yamal pipeline was constructed in such a way that it would be possible to add a second pipeline at a later stage (Murd, interview). The counter-argument from the Nord Stream consortium is that there is a need to become independent of politically unstable transit states, and that a second Yamal pipeline will not contribute to route diversification (Nord Stream 2006b, 28). In light of the Russo-Ukrainian and Russo-Belarusian energy disputes of 2006 and 2007, it may appear logical to circumvent these transit states to ensure stability of supplies to the EU. But, as the opponents argue, this does not automatically imply a need for a sub-sea pipeline, which may cost more and is politically controversial. Therefore, as early as in 2004, Poland and the Baltic States proposed a third alternative, Amber, which would bring Russian gas through Latvia and Lithuania to Poland, where it would join the Yamal route to Germany (Götz 2006, 13). The Amber pipeline would thus contribute to route diversification and bring Russian gas to Germany and the EU without passing through non-EU transit states. Larsson (interview) believes that by choosing Amber over Nord Stream, one would get all the benefits at a lower overall cost; that is, if the main goal is energy security. According to the First Secretary in the Energy Policy Division of the Lithuanian MFA, Tomas Grabauskas (interview):

"*Amber, financially, would be three times less expensive than the Nord Stream project. If you look from an economical point of view, Germany and Russia are choosing a three times more expensive project, so it looks like it is politically motivated … When we have discussions with the Russian diplomats, they are saying that they would like to avoid transit countries that are not reliable … They are referring to Belarus and Ukraine, and we are asking, have you ever had any problems with Latvia or Lithuania? No, they have not.*"

It is, of course, important to consider Nord Stream AG's response to the scepticism outlined above. First, Chief Executive of Nord Stream, Matthias Warnig, has stated that "*the shareholders gave our company the order to build an offshore pipeline through the Baltic Sea and in that they are investing millions of Euros … The order is not – and it is not up for debate – to have an overland route as an alternative solution for Nord Stream*" (Reuters 2008a). Second, during a European Parliament petition hearing on the pipeline project on 29 January 2008, the consortium claimed that "*an onshore pipeline, whilst cheaper to construct, would be much more expensive to maintain over*

its lifespan due to the necessity of compressor stations every 200 km along the route" (Nord Stream 2008h). It was also pointed out that these calculations did not even include transit fees, which would push the cost even further. As argued by the editorial of the Swedish newspaper Expressen (2006), "*that the Baltic States and Poland would rather see the pipeline laid within their territory has to do with economic considerations. They are dreaming about shining millions in transit fees, and that is not an argument that should be supported.*"

Whilst this may serve as a powerful rhetorical point, the actual numbers must be assessed. Although transit fees are commercially confidential, which makes exact calculations difficult, Riley (2008, 7) has produced some estimations based on the Ukrainian transit fees, which have had some publicity. Before the 2009 Russian-Ukrainian gas dispute, gas was flowing through the Ukraine at the price of US $ 1.60 per mcm per 100 km (World Bank 2006, 1). For a 1200 km pipeline transporting 55 bcm of natural gas per annum, the yearly cost would be about $ 1 billion (some € 630 million).[98] But since a certain part of an onshore stretch would be on Russian territory (see Figure 4), the annual transit cost would probably be lower. Moreover, there is great uncertainty regarding how quickly the Shtokman and Yamal peninsula gas fields can be developed and become operational. So even though the first Nord Stream leg may successfully get its gas from the Yuzhno-Russkoye field, either of the two former will have to supply the gas for the second leg, and this may not happen until 2020 at the earliest. Hence, Riley concludes, "*for the next decade at least the transit fee gain for Nord Stream … is likely to be closer to $300 million than $1 billion per annum, hardly a substantial offset for an offshore pipeline costing upward of €12 billion (US $17.5 billion)*" (Riley 2008, 7).

Furthermore, Mati Murd (interview) in the Estonian MFA underlines that lumping the Baltic States and Poland together in the transit fee question is inaccurate, since none of the proposed land-based alternatives involve Estonia as a transit state. Thus, he holds, it is not correct to argue that the Estonian position is based on economic considerations, as suggested by the Swedish newspaper Expressen. As regards the two other Baltic States and Poland, Yamal 2 or Amber would inevitably involve transit fees, but few believe that their considerations are purely based on these. Acting Director of the Centre for Strategic Studies of Lithuania, Žygimantas Vaičiūnas (interview), argues that even though it would be fairly easy to calculate how much his

country loses by not becoming a transit state, the Lithuanian opposition against Nord Stream is to a much larger extent based on energy security calculations.[99] The same can be claimed for the other bypassed states, all of which have only one possible gas supplier, Russia. Although they are not equally dependent, Nord Stream AG's seemingly endless willingness to accept higher costs for its offshore pipeline has led many to believe that there are political motivations behind the project. The German newspaper Berliner Zeitung (2007), for instance, has noted that "*not even the costs, which have skyrocketed, have given the consortium second thoughts … Gazprom, in particular, is insistent on building the pipeline, as it will decrease Russia's dependence on transit countries like the Ukraine, Belarus, and Poland.*"

Evidently, there is concern that Nord Stream is part of a broader political strategy. In bypassing the Baltic States and Poland (as well as the Ukraine and Belarus), Russia increases its leverage on these states, and there is fear that should a bilateral or regional dispute occur, they may become victims of supply interruptions and other strong-arm tactics (Larsson 2007, 7; Baran 2006, 38). The important question is whether such fears are warranted or not. According to ex-Chancellor Schröder "*the EU is hostage of a nationalistic anti-German, anti-Russian policy*" (Welt 2007a), and he cannot understand such fears, as "*there are no safer energy suppliers than Russia*" (Spiegel 2007b). Robert Larsson (interview), by contrast, holds that "*if Russia had been like Norway, then this would all be much simpler; Norway does not cut off gas supplies to Sweden, for instance.*" These statements clearly rest on different assumptions, and the next section will therefore discuss whether there is reason to be wary about Russia's intentions and energy policy.

Past Russian supply interruptions: Politically motivated or accidental?

The question of what drives Moscow's energy policy is a complex one. Like any other energy exporter, Russia must always make both economic and political considerations when engaging in infrastructure projects. With respect to Nord Stream, the crucial question is how these considerations are balanced. Even though the pipeline will bypass certain states and connect directly with the German market, this does not immediately mean that Russia will use energy supplies to blackmail Eastern Europe.

[98] Based on June 2008 exchange rates (1 USD ≈ 0.63 EUR, or 1 EUR ≈ 1.6 USD).
[99] Officially Lithuania opposes Nord Stream because it may jeopardise the Baltic Sea environment, but Vaiciunias and other commentators hold that the environmental arguments are in reality secondary to the energy security ones. This point will be discussed shortly.

As with any other capability energy only becomes a lever when used as such (Larsson 2006, 177). Regarding Nord Stream it is therefore important to ask how Russia sees the rest of Europe. In an interview with the Russian newspaper Kommersant (2008b), Vice President of the European Parliament, Marek Siwiec, stated that "*for Russia, there are "good guys" in the EU, with whom she deals, and "bad guys" with whom she does not deal … Russian elites want to maintain a certain imperial entourage, and an empire should have a large army and influence its neighbours.*" Similarly, the Director of the International Centre of Defence Studies in Estonia, Kadri Liik, argues that:

"*Russia does not regard Estonia as a country similar to Finland. It is like we are bound to be someone's vassals, and now they think that happens to be the United States. They do not see us as a country capable of independent thinking. Whereas Finland – and this is really an exception – Finland is a small country next to Russia that has managed to convince Russia that they can act independently … and that does not even have to do with size; I think their opinion about Poland is the same as the one about us.*" (Liik, interview).

Although the Kremlin would probably deny that EU members of "*old*" and "*new*" Europe are treated differently, or that energy is being used for political purposes, Larsson (2007, 77-81) claims that Russia has used energy as a political tool on more than 55 occasions since 1991. The aim has allegedly been to affect policy changes in the targeted countries, and the "*weapons*" used have included supply interruptions, explicit threats, coercive pricing policies, and hostile take-overs of infrastructure or companies. For instance, in January 2003 Russia suspended its oil deliveries to the Latvian port of Ventspils. The official justification for the cut-off was that the Latvian tariffs were too high, and that it was more reasonable to ship the oil from the Russian terminal in Primorsk in the Gulf of Finland. However, critics noticed that the embargo coincided perfectly with Latvia's refusal to sell its oil transit company Ventspils Nafta to the Russian oil company Transneft, and many saw the oil cut-off as Russia's way of punishing Latvia for insubordination. This suspicion was not reduced when the Vice President of Transneft, Sergei Grigoriev, blatantly declared: "*Oil can only flow from Russia. You can of course sell [the port] to Westerners, but what are they going to do with it? Turn it into a beach?*" (cited in Baran 2006, 38).

Lithuania has had similar experiences with the Russians. Between 1998 and 2000, Transneft cut off oil supplies no less than nine times in order to stop the Lithuanians from selling their port, pipeline and refinery to the American company Williams International (Hamilton 2008b, 120-121). Moreover, in July 2006, deliveries of crude oil through the Druzhba pipeline to the Mažeikių Nafta refinery were abruptly stopped. The

refinery is the biggest commercial actor and most important taxpayer in Lithuania, so the economic effect of the cut-off was significant. As with the Ventspils cut-off, this one also followed a Russian failure to gain control over energy infrastructure. In the preceding months, the Polish energy company PKN Orlen had, through open auctions, acquired 84.36 % ownership of Mažeikių Nafta at the expense of Russian companies. Therefore, when oil supplies to the refinery were stopped on 29 July 2006, officially due to a leak on Russian territory, suspicion grew that this was an intentional cut-off (Baran 2006, 133; 2007, 14-15). Today (April 2009) the pipeline is still broken, and it is not likely that it will be repaired. On 1 June 2007, the Russian Energy and Industry Minister Viktor Khristenko announced that Russia in the future would supply the Mažeikių refinery exclusively via the Baltic Sea, which significantly raises the cost for Lithuania and PKN Orlen. Interestingly, the announcement was made the day after Vilnius declared that it wanted to join the US plan for a missile defence system in Europe (Stratfor 2007). Although Moscow would probably argue that its decision is based purely on economic considerations, few Lithuanians are likely to be convinced that the timing of the announcement was a coincidence.

In Estonia, a Russian gas cut-off occurred in 1993 after the implementation of a new law on citizenship, which was aimed at clearing up the legal status of non-Estonian residents. After its recent independence Estonia had only granted automatic citizenship to those whose families had been living in the country before the annexation by the Soviet Union in 1940; others could become legal Estonians after a two-year waiting period and by passing a demanding language test. As a result, some 600,000 people (almost 40 % of a population of 1.6 million) had become stateless. Under the new law all non-Estonians, most of whom were Russians, would have to apply for a residence permit within two years or else leave the country. The law infuriated Moscow, which condemned it as "*a form of ethnic apartheid*" (New York Times 1993), and when gas deliveries were subsequently halted it was difficult not to interpret it as a form of retaliation. Perhaps to no surprise, Gazprom's official explanation for the cut-off was economic, namely that Estonia had unpaid debts of 10.5 billion Roubles (US $ 11 million) and that recent negotiations with the Estonian government had not given the "*desirable results*" (New York Times 1993).

Besides this incident there have been few energy-related problems in the Russo-Estonian relationship. This may stem from the fact that Estonia is significantly less dependent on Russia than the other Baltic States, and that the Russo-Estonian

relationship is less strategic than Russia's energy relations with the two other Baltic States. Latvia, for instance, has an underground storage facility for natural gas, which supplies the St. Petersburg region during wintertime, and Lithuania transports gas from Russia to the exclave Kaliningrad region.[100]

The examples from the Baltic States are a few out of many similar incidents in Russia's neighbouring countries. Supply interruptions such as the ones mentioned above, have primarily occurred in states within the former Soviet territory (the CIS and the Baltic States), and this has led some to argue that there is a neo-imperial slant to Russia's energy policy (Salukvadze 2006). Hedenskog and Larsson (2007, 9), for instance, argue that "*a key strategic goal for Russia is to keep and restore the former CIS area intact as an exclusive zone of Russian influence.*"

However, the former British ambassador to Russia Sir Roderic Lyne (2006, 9) does not consider "*neo-imperial*" an accurate description. He characterises the actions of Russia's energy companies in the post-Soviet space a "*post-imperial hang-over not wholly unlike the British experience for a generation and more after the Second World War.*" Similarly, the Director of the independent Institute of Energy Policy in Moscow, Vladimir Milov (2006, 15) uses the term "*post-imperial syndrome' and describes the Russian energy diplomacy as 'highly unpredictable.*" In contrast with those who talk of neo-imperial aspirations, he does not believe that Moscow has a clear long-term strategy on how to use energy for political purposes.

As already indicated, the Russian energy companies always seem to have reasonable and *economic* explanations at hand when energy supplies are halted, and even if intentions are hostile they can hardly be proven. The Baltic and Polish fears regarding Nord Stream can therefore easily be dismissed as unwarranted by simply asking: "*Why would anyone spend billions of Euros on a pipeline, and then cut off supplies to the bypassed states? It does not make any economic sense.*" Nonetheless, it can also be argued that the Balts, based on their recent energy history with Russia, cannot be expected to react differently to Nord Stream. Just like the Germans' recent historical experiences have taught them that Russia can be a reliable partner, the Baltic States' recent history has taught them quite the opposite. This, in turn, helps explain why the

[100] It should be noted that the Russo-Estonian relationship per se is not friction-free, as witnessed during the Red Army war memorial dispute in 2007. See New York Times 2007, Socor 2007 and Stupachenko 2007.

German argument of interdependence and stronger ties with Russia is not accepted by the Baltic States. Moreover, it should not be forgotten that Germany is a giant in the European context. With a population of over 80 million and the world's third largest economy (2007) – almost 40 times the size of the three Baltic economies combined, and 2.5 times the size of the Russian economy – Germany has a far better chance at balancing Russia than its smaller eastern neighbours (World Bank 2008, 1-2). This fact is closely linked to the topic of the final subchapter, which assesses another possible threat related to Russia as an energy supplier that does not involve intentions, namely that Russia in the very near future may not have enough gas for everyone. It will be shown that should this scenario unfold, Nord Stream may in fact pose a significant threat to some of the countries east of Germany.

The real threat: A potential Russian gas deficit

There is little doubt that Russia has abundant natural gas resources. According to BP Statistical Review of World Energy 2008, the Russian Federation possesses the largest proven gas reserves of the world: almost 45 trillion cubic metres (tcm) – some 25 % of the world total (177 tcm). The problem, however, is that the Russian gas sector for decades has suffered from underinvestment. Coupled with stagnating production in existing fields, fast-growing domestic consumption, and increasing export commitments, this leads to grim projections for the near future (Mandil 2007, 5; IEA 2006c; Mäe 2007, 106; Riley 2006). In 2004 Russia had a domestic gas deficit of 69 bcm, and by 2010 the deficit may be significantly higher, as indicated below.

Figure 5. Projected Russian gas deficit

	2004 (bcm)	**2010 (bcm)**
Gazprom's gas production[a]	545	550
Gazprom's export to Europe/CIS[b]	191	312[c]
Remaining volume for domestic consumers	354	238
Russia's domestic demand	402[d]	469[d]
Gap	69	231[d]
		(202)[e]
Gas deliveries from Central Asia[f]		105
Total gap		**126**
		(97)[e]

[a] Without new Yamal fields, optimistic forecast
[b] Excluding Asian exports
[c] Includes 200bcm to Europe & 112bcm to CIS
[d] Probable scenario, 4.3 % growth
[e] Reduced scenario, 2 % growth
[f] Best possible scenario

Source: Milov et al. (2006, 305)

Chairman of the Board of the Russian electricity company RAO UES, Anatoly Chubais, therefore believes Russia should focus less on exports and more on the needs of the domestic market. "*We have this western stream, northern stream, south stream … What I believe we need is a Russian stream*" (BarentsObserver 2008b). Robert Larsson (interview) makes a similar point:

"*If one only looks at what Europe needs, then that is only one side of the story. But if you turn it around to look at what Russia is able to deliver, then you see that it may be very difficult for the Russians to supply sufficient amounts of gas. Then you might ask if we need South Stream [another planned Russian gas pipeline], the existing pipelines, LNG and Nord Stream, when there is too little gas on the other side. There will be an excess capacity in the export pipelines, and too little capacity in production pipelines.*"

Mati Murd (interview) in the Estonian MFA explains why this is crucial for the Baltic States, or any other small state highly dependent on Russian gas: "*The main issue is that all the Baltic countries, as well as Finland, have only one supplier, which is Russia. Technically, we are not connected to the rest of Europe.*" Indeed, these states are 100 % dependent on Russia for their natural gas supplies, which means that any supply interruption, regardless of the reason, cannot be compensated for by buying similar amounts of gas elsewhere. It is important to keep in mind, however, that natural gas is not equally important for all these countries.

Finland, for instance, has a relatively diverse energy mix with five different fuels each accounting for 10 % or more of the total supply – gas having the lowest share of 10 %. The country's energy import dependence (54.6 %) is only slightly above the EU average (53.8 %, see Figure 6), and since Finland is currently building its fifth nuclear reactor and planning a sixth, this dependence may even decrease in the near future (EU Commission 2008; Vaahtoranta and Murd interviews). In Latvia and Lithuania, by contrast, the share of gas is significantly higher – 30 % and 29 % respectively – and energy import dependence is also higher than the EU average (EU Commission 2008). Latvia's energy security, and use of gas, depends much on the country's gas storage facility, Incukalns, which is filled with Russian gas in the summer and supplies Latvia, Estonia, and Russia during wintertime. Although the facility gives Latvia some security of supply, it also contributes to dependence on Russia, and it should be noted that Gazprom owns most of the gas stored there (Kasekamp et al. 2006, 21; Baran 2006, 29). With regard to Nord Stream, some have argued that the reason why Latvia gradually has appeared less critical about the project than Estonia and Lithuania is the prospect of a spur pipeline from the Nord Stream that could connect with the gas

storage facility and thus enhance Latvia's energy security. This, however, is not a part of Nord Stream AG's official plans (Welt 2007b; Mäe interview, Kasekamp interview).

For Lithuania, the main problem is that nuclear energy, which up to now has contributed the most to the primary energy supply, will soon be affected by the 2009 shutdown of the Ignalina nuclear power plant. The two reactors at Ignalina have since the days of the Cold War supplied Lithuania with most of its electricity, but as a condition for Lithuania's accession to the EU, the country would have to close the two Soviet-era nuclear reactors. The first was shut down in 2004, the result of which has been increased energy import dependence (as reflected in Figure 6), and the decommissioning of the second reactor will undoubtedly exacerbate this tendency. A new reactor is under planning but it will not be operational before 2015-18 at the earliest, resulting in a significant short-term energy deficit (Baran 2006, 18; WNN 2008b).

According to the Acting Director of the Lithuanian Centre for Strategic Studies, Žygimantas Vaičiūnas (interview) Lithuania's gas demand will increase significantly when the second Ignalina reactor is shut down, and this may help explain why there is so much concern about Nord Stream. Vaičiūnas argues that although the Lithuanian government officially opposes the project because of its potential negative impact on the Baltic Sea environment, in reality energy security considerations are far more important. The best scenario from Vilnius' point of view would undoubtedly be the Amber route, as this would enhance energy security by making Lithuania a transit state for Russian gas going to Germany. The second-best option, he asserts, is the status quo; that is, import of Russian gas, but at the same time transit of gas to the Kaliningrad region, which gives Lithuania some counter-leverage on Russia. Nord Stream is perceived as a worst-case scenario, particularly because there has been fear that a spur pipeline to Kaliningrad may be added to the project (although this is not a part of Nord Stream AG's official plans), thus removing the current Lithuanian counter-leverage on the Russians (Vaičiūnas, interview; Janeliunas & Molis 2005, 211; Larsson 2007, 23).

Estonia is seemingly in the best position from an independence point of view. The country's import dependence is significantly lower than the EU average – at a mere 33.5 % – and primary energy supply is dominated by solid fuels, particularly oil shale, with which Estonia is abundant. The share of gas in the energy mix (15 %) is also low

compared to the other Baltic States, which makes the Estonians less susceptible to energy pressure than their southern neighbours. Unfortunately for Estonia, this state-of-affairs cannot last, due to the high CO_2 emission levels of oil shale, and natural gas has been presented as a feasible alternative. The use of gas has been steadily increasing in the past 20 years, and it is projected its importance will soon exceed that of oil (20 %) in Estonia's energy mix (Kasekamp et al. 2006, 7).

Finally, it is worth mentioning that Poland, a state that has also voiced criticism for being bypassed by Nord Stream, is among the least dependent EU states in terms of energy, due to its vast hard coal resources. Import dependency is only 19.9 %, and natural gas accounts for only 12 % of the energy mix, making Poland less vulnerable than the Baltic States.

Figure 6. Import dependence of selected countries, 2003 and 2006

	Import dependence, %		**Import dependence, %**	
	2003	**Relative to EU average**	**2006**	**Relative to EU average**
Finland	59.2	10.3	54.6	0.8
Estonia	26.3	-22.6	33.5	-20.3
Latvia	62.5	13.6	65.7	11.9
Lithuania	45.2	-3.7	64.0	10.2
Poland	13.2	-35.7	19.9	-33.9
EU Average	**48.9**		**53.8**	

Source: EU Commission (2008)

Hence, the three Baltic States are either already heavily dependent on Russian gas, or they will become increasingly dependent very soon, and this is why the Nord Stream pipeline is of such interest to them. As discussed in the previous subchapter, their perception of energy security (or lack thereof) is undoubtedly based on recent historical experience with Russia. And, surely, if it could be proven that Moscow is pursuing a neo-imperial foreign policy by means of energy levers, then Nord Stream could easily be interpreted as a means to put pressure on the Balts by halting their gas supplies without it affecting Western Europe. The problem is that motivations are never clear-cut; rather, they are contingent on interpretations, which will differ greatly depending on the interpreter.

Regardless of foreign policy intentions, however, the Russians may simply not be able to produce enough gas to cover all of their commitments. Should Russia then have to choose where to send its scarce gas, it is fairly safe to assume that Germany will be

higher on Moscow's list than most Central and Eastern European states. The numbers speak for themselves: In 2004, the EU members that were formerly under Soviet influence in the Warsaw Pact (the Baltic States, the Czech Republic, Slovakia, Poland, Hungary, Romania and Bulgaria) imported a total of 42.69 bcm of gas from Russia, whereas Germany alone imported 40.87 bcm (Stern 2005, 69, 110). In the event of a severe scarcity of gas, Nord Stream could contribute to a real division of Europe because it would enable Moscow to supply its single most important market, and decidedly most important European partner, at Eastern Europe's expense. Today this is not possible because all the gas from Russia to Germany flows through Eastern Europe. Should the "*scarcity-of-gas*"-situation occur it would also be difficult to criticise Moscow for hostile intentions, since the Kremlin would have no choice but to cut supplies to someone. Berlin, at least, would hardly object to such cuts if the alternative were reduced supplies to Germany.

Conclusions

The core aim of this article has been to highlight the main divergences within the EU regarding the planned Nord Stream pipeline. It is obvious that numerous states within the union consider the pipeline to be of crucial importance, but they do so for entirely different reasons. A brief recapitulation of the main positions may be helpful:

To understand how important Nord Stream may be for Germany, one should start by remembering what Germany represents on the European continent and internationally. Not only is Germany the biggest EU member state in terms of population, it also has the union's largest and the world's third largest economy. Germany is a great power in the heart of Europe, but one that does not possess nuclear weapons, and whose power therefore largely rests on its economic strength. An important foundation for economic growth and stability is secure energy supplies, and for a state the size of Germany this cannot be underestimated (particularly in light of the current financial crisis). A crucial issue at the moment appears to be the nuclear phase-out, which inevitably will lead to an energy shortfall. Compensating for the energy loss means increasing the use of other forms of energy, and natural gas is a logical choice for several reasons. First, the intra-government discord reduces the chance of reconsideration of the nuclear phase-out plan. Second, renewable energy sources can hardly, at least not in the short run, compensate for the loss of nuclear power. Third, Germany's CO_2 emission goals make it difficult to resort to increased use of other fossil

fuels than natural gas, which is environmentally friendlier than oil and coal. It is therefore not surprising that gas stands out as a good overall alternative for Berlin. That the gas will come from Russia seems obvious, considering Russia's vast proven reserves and geographical proximity.

These factors are all contemporary, as it were, and they may appear sufficient to explain why Germany needs and supports Nord Stream. What is also important, however, is the Russo-German energy history, which has largely been a stable one. This becomes clearer when contrasting the Russo-German energy relationship with the Russo-Baltic. Whereas Nord Stream may be an answer to Germany's energy dilemma, the Baltic States have perceived of the pipeline as a problem in itself, and this is to a large extent due to their history with Moscow. As the analysis revealed, all the three Baltic States have experienced energy cut-offs or other strong reactions from Russia following political or commercial disputes, and this gives them little reason to embrace a pipeline that will bypass them. In contrast with Germany, which has only accidentally felt the impact of Russian supply cuts, the Baltic States have been the direct targets, or unlucky victims, of supply interruptions. If Nord Stream is constructed, Russia could potentially cut supplies to Eastern European states without it affecting the supply levels to Germany. In light of the turbulent historical relationships many of these states have with Moscow, it can hardly come as a surprise that they have been sceptical about the project. The core problem, however, is that the motivation for Russia's past energy actions cannot be proven; they are contingent on interpretation. And as long as the burden of proof rests on those who have previously been under Soviet influence, Moscow can quite easily dismiss their fears as a result of Russophobia. In a sense, the historical argument serves both sides. Similarly, Germany and other Western European states that have had good energy relations with the Russians can argue that Russia in fact *is* a reliable supplier, and far more stable than other potential gas suppliers, for instance in the Middle East. Hence, whether Nord Stream in fact represents a threat to the Baltic States' energy security is not clear-cut if one only considers what has happened in the past.

As discussed, the crucial issue may in fact be that the Russians, due to lack of investments in new gas fields and infrastructure, soon will have problems balancing production, rising domestic demand and growing export commitments. Should there be a scarcity of gas, it could be less relevant whether Moscow sees the old and new EU members differently; someone will have to tackle reduced gas supplies, at least until

new fields and transport infrastructure have been developed. Considering the German gas market's size and importance for Russia one can imagine that it will be given priority over the smaller gas markets in Eastern Europe; that is, if Nord Stream is constructed so that Russia can supply Germany directly. Seeing that the three Baltic States are likely to become increasingly dependent on Russian gas, it appears clearer why they may have reason to worry. It should be noted that a gas deficit, be it temporary or permanent, would also affect non-EU states such as the Ukraine and Belarus.

For Russia, Nord Stream appears to be a win-win project. On the one hand, if Moscow indeed seeks to use energy as a political lever against states within its former sphere of influence, then Nord Stream will make this possible. On the other hand, if a gas deficit is "*brewing*" then the offshore pipeline will enable Moscow to supply its allegedly most important partner in the EU whilst cutting supply levels elsewhere, and hence, stable relations with Berlin can be maintained.

Interestingly, the prospective scarcity of gas also makes Nord Stream the best choice for Germany. Being the first recipients of gas from Nord Stream, the Germans would not have to worry about transit states taking their shares. During the Russo-Ukrainian gas dispute this is precisely what happened; Germany experienced what it can be like to be at the end of the supply chain when the pressure in the pipeline drops. The essential issue, however, is that Germany, since the Nord Stream project was announced, has maintained that it is a pan-European rather than a Russo-German project. None of the official announcements indicate that Berlin sees a Russian gas deficit coming and therefore wants to cover its own needs while letting the new EU members deal with the potential problems. Surely, such an announcement would hardly have been perceived as politically correct within the EU, which, after all, is in the process of developing a common energy policy. In any case, Nord Stream appears to solve so many potential problems for Berlin that it would be strange if such considerations had not been made. It should also be kept in mind that the whole debate about a common energy policy, and the related critique of Germany for choosing a strategy that does not take into consideration the energy needs of the most recent EU members, is relatively new. When the plans for Russo-German pipeline through the Baltic Sea were initiated, the Baltic States and Poland were some six years away from becoming EU members. And when the European Commission issued its Green Paper on Energy in March 2006, which declared inter alia that the Baltic States

remain an "*energy island*", the memorandum regarding the construction of Nord Stream had been signed half a year earlier. This is not to suggest that talk of a common energy policy was entirely new when the Green Paper was issued, but it is important to keep in mind that as long as there is no common policy for an issue area, every state will have to find its own solutions.

Nonetheless, the interpretation that Nord Stream divides Europe is very much a result of Germany's choice not to include its eastern neighbours in the pipeline plans, and may also have to do with the newest EU members' feeling of not entirely belonging to "*Europe proper*". Mati Murd (interview) in the Estonian Ministry of Foreign Affairs gives an interesting summary of how the Europe-focused arguments have been perceived in Estonia:

"*Maybe one more issue will explain a little bit: The emotional background. And this is about the rhetoric used by Nord Stream, by Gazprom, but also by the European partners of the project. All these companies say that this project is important because it allows for us to supply Europe, or the European Union, directly. In this context we are questioning, "Where is the border of Europe or where is the border of the European Union?" If Gazprom or the Russian government thinks the EU starts at the German border, this is not acceptable. This is clearly a policy of divide and rule, and it is very unfortunate that the European partners of this project use the same rhetoric.*"

Clearly, the feeling of not being regarded as fully European should not be underestimated as a contributing factor in the new EU member states, as was also reflected in the statements about Nord Stream being a Russo-German pact.

The divergences discussed in this article will undoubtedly remain among the biggest challenges for the EU in the time to come, and not only with regard to Nord Stream (or other projects such as South Stream and Nabucco). The crucial issue seems to be that the EU now consists of old and new members with diametrically different historical experiences in the energy domain, particularly in their relationships with Russia. Nord Stream did not create these differences, but the project has definitely elucidated that the EU is not unitary as it used to be. Addressing this issue in an appropriate and jointly manner may be one of the most important tasks facing the union in the time to come. How the EU will tackle the challenge falls outside the scope of this article, but suffice it to say that the issue is high on the agenda. After the 19-20 March 2009 summit in Brussels the European Council (2009, 8) concluded that "*in order to deliver on energy security, the EU collectively, as well as each Member State, must be prepared to combine solidarity with responsibility.*" It remains to be seen, however, whether the community will be able to walk the walk and not only talk the talk.

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