



UNIVERSITÀ DEGLI STUDI DI TRIESTE

Sede amministrativa del Dottorato di Ricerca

Sedi Consorziate (IUIES)

Università degli Studi di Udine - Università di Klagenfurt - Università MGIMO di Mosca -
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Sociologia Internazionale di Gorizia

CICLO DEL

DOTTORATO DI RICERCA IN

POLITICHE TRANSFRONTALIERE PER LA VITA QUOTIDIANA
TRANSBORDER POLICIES FOR DAILY LIFE

Russia and EU at crossroads

The role of the Black Sea region in the European Energy Security

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I would like to thanks to my family: my mother, a very dear person to me, which I hope that from above the sky is very proud of me, to my father, my grandmother and also to my very best friend Loredana and to my boyfriend Tiberiu for their support.

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Introduction

The beginning of 21st century revealed to the world the beginning of a small war proportion. Geopolitics is a gigantic series of two player chess games, in which the players seek positional advantage. In these games it is crucial to know the current rules that govern the moves. Knights are not allowed to move diagonally.

From 1945 to 1989, the principal chess game was the one between the United States and the Soviet Union and it was called the “**Cold War**”. Nowadays, the chess game is between European Union and Russia and it is called metaphorically the “**Gas Cold War**”.

European energy security is facing a set of serious challenges connected to Europe’s dependence on Russian energy and the need for diversifying energy supply sources. Now days, European Union and Russia arrived at a crossroad regarding their agreements on energy matters.

The target of this PhD is to explore, leaving from the fact that are serious concerns in Europe that Russia may try to use its energy exports as a political lever in order to settle its supremacy on the political board.

This thesis focuses on finding a solution towards the European’s major concern – energy security of supply, by start building new routes of gas supply.

For a better understanding, I structured my paper like a chase board, with a stake – new routes of gas supply, with two major players – European Union and Russia, one key actor – The Black Sea Region and of course with a solution.

The main research questions of this thesis are: *In the enlarged European Union it could be true that Russia may try to use its energy exports as a political lever in order to settle its supremacy? And, in order to be successful it will use the energy price?* To answer these questions a first step is to understand the relations between EU and Russia and the role that, the Black sea region plays in this problem.

The research proposes a theoretical framework, using a quantitative analyze method (analysis of content) and a qualitative analyze method (informal discussions with experts from this area). In order to be more precisely with my thesis assumption, I carry out some informal discussions with experts from energy and international affairs area, from Europe, Black sea and the Caspian region, countries who were involved in the energy case, to discuss and to analyze the impact of Russia’s increasingly assertive foreign energy policy on Europe and European

security, started from the gas crises launched by Russia that have a real affect on Europe economy from 2006 till nowadays.

My point of view is that Russia will try through different ways to consolidate its dominance as a Global leader, using its most convenient means – the “energy price” and my believes were that the only way to solve the problem is by start building a diversification supply strategy that could link Europe to the Caspian basin through the Black sea region. If this strategy will succeed, Europe will be able to reduce the Russian influence and to create a safer life climate.

Regarding the quantitative analyze method, the theoretical framework was founded by reading some record books in the international relations and energy field, by participating to conference and seminars in Romania and outside the country, including a stage at the European Commission on energy matters, monitoring the news and the press articles in this field (Mediafax, Journal of European Public Policy, Euractiv, Euroobserver, Eupolitix, CNN, BBC, Euronews).

Starting from the successful work experience in the energy field and cross-border cooperation, my thesis aims to deepen the understanding of the European Union energy security of supply.

In the fallowing chapters of my thesis, I studied several aspects of Europe’s energy dependence on Russia, and the role of the Black Sea region as a source of alternative supplies. The first chapter begins with two overviews of Europe’s economic and energy security, which show Europe’s vulnerability, but also the potential lying in the complementarities between Europe and the states of Central Eurasia.

The paper then proceeds to discuss the role of Gazprom in both Russian domestic and foreign policy, respectively, which provide a disturbing picture of the emerging Russian energy diplomacy. Following this, the focus shifts south and east. A chapter puts forward the role of the emerging Black Sea region as a hub in European energy security, followed by chapters devoted to the specific role of Turkey. Subsequently, two specifically important infrastructural projects are studied – the Nabucco and the South stream pipelines, ending with a pipeline solution as a Trans-Caspian pipeline. The paper final concludes with the outlining of a supply diversification strategy.

Chapter II

2. Energy security situation in Europe

This chapter is providing a short overview of the dangers regarding the concept of “**energy security**”. For a better explanation, first, I analyzed the difference between the concepts of “*security*” and “*securization*” in the field of energy and second I explained the current energy situation in which Europe is right now.

Although the securitization of energy is a global issue, this chapter’s argument will be illustrated by the gas crisis and the Russian geopolitical insecurities which are laying the foundations of the possible securitization of energy in the Eurasian heartland.

It is important to make a clear distinction between what is meant by energy security and the securitization of energy. First, a general description of “energy security” will be given together with an overview on how this concept came to be so prevalent in the media, politics, and the public domain. Secondly, the concept of “securitization” will be analyzed in the domain of energy and the wider implications vis-à-vis European security and its relations with Russia.

According to the *International Energy Agency* (IEA) “**energy security**” means “adequate, affordable, and reliable supplies of energy.”¹ In this definition there are three important words: adequate, affordable, and reliable, or in layman’s terms: plenty, cheap, and easily available.

The securitization of energy is a completely different concept to that of energy security. In fact, it will be argued that it is precisely the failure of energy security that enables securitization to take place.

In the domain of energy, we can see the issue of energy security being taken out of its traditional ‘rules of the game’ and is being thrust into the role of an over-politicized issue. Energy, in this analysis, is as vulnerable to “securitization” as anything. This is due to various factors, the most important one being the fact that the primary drivers of the world economy—oil and gas—are non-renewable energy sources.

The energy security has two sides: **security of supply** and **security of demand**. Energy importing countries want security of supply from energy exporting countries. Energy-exporting

¹ International Energy Agency, World Energy Outlook 2007

countries, in turn, want security of energy demand from energy importing countries. For both consumers and producers this implies dependency.

Security of supply and **security of demand** have traditionally been seen as market driven concepts. Supply and demand of primary energy products set price, and if one wants security of supply, one needs to pay the market determined price. However, many things had been changed in the processing of the energy market mechanisms, starting with the proliferation of concepts such as “resource nationalism”, government bilateral agreements and energy as a political lever. In the last five years we have seen all of these concepts in action for numerous times.²

The market for oil and gas has shifted from a buyers market to that of a sellers market, to the detriment of heavily import dependent countries, and has resulted in an increased call from various levels of a dependent society to “do something” about energy dependency, invariably pushing a securitization agenda. This call will present countries embedded in energy-dominated relationships with a myriad of problems, and driven the dominance of the concepts outlined above.

Therefore, the question of energy security from a supply perspective will be heard in the halls of government of any energy dependent country.

In the face of the last threats that affect EU security, I could say that the real danger for today Europe is not the terrorist attacks but the oil crises. Without ensuring its energy security, Europe will not have enough tools to be a serious global player, because energy matters are very much connected with those of political, economic, and military nature. Having substantial energy resources allows countries to advance their interests more effectively, while those dependent on foreign oil and gas are vulnerable to pressures if unable to guarantee effective supply mechanisms.

This chapter argues that if the EU wants to develop a successful common European Energy supply strategy, than the Member States should collaborate not only between them, but also with NATO, the Black Sea countries and with the Caspian in securing routes of supply from asymmetric threats. Also it had to find methods in order to integrate energy rich countries like Azerbaijan and Kazakhstan into Euro-Atlantic structures, and to develop ways of communications for streightening the dialogue with Russia.

² Baran, Z. and E. Tuohy, *Energy Security Policy and the Security of Energy Supplies*, The Hudson Institute, Washington, D.C., 2006

Today's Russia is the most eloquent example on how energy resources have been smartly used in order to strengthen the country's global positioning. Huge energy revenues, pressure on foreign countries by leveraging energy and active purchase of the foreign energy infrastructure has moved Russia back to the world stage as a serious global player.

It is interesting that for quite a long time after the collapse of the Soviet Union, Russia was less vocal and less capable to claim the role it has today despite having a huge nuclear arsenal, conventional forces, political tools and other policy instruments. Only after the rise of oil and gas prices and the pursuit of the energy-focused policy was Russia able to act in such a way. So, Russia became aware at a certain point of its most powerful weapon – **energy**.

Starting from the Ukrainian crises in January 2006 and continued with the Georgian conflict from 2008, finalizing with the January 2009 gas crises, Russia highlighted its willingness to use the energy policy to settle its rules in the world.³

Europe currently imports over half of its natural gas from Russia, while several East European states are almost completely dependent on Russia for their gas supply.

Given the importance of energy security, the question of whether Europe is ensuring it should be raised. The answer to this question is NO. And there are several reasons to claim this. First of all, European countries are overly dependant on energy imports and have very few energy suppliers, Middle East countries and Russia are among the major ones.

The EU is the world's largest importer of oil and gas, importing 82 percent of its oil and 57 percent of its gas. Russia supplies almost half of Europe's natural gas and 30 percent of its oil.

³ Finon, D., Russia and the "Gas-OPEC". Real or Perceived Threat?, Ifri Russia/NIS Centre, Russie.Nei.Visions No. 24, November, Paris, 2007

Fig. 1 – Russian Gas Pipelines



If current trends continue, Europe will be more energy-thirsty and more dependent on the traditional suppliers. By 2030, because of growing energy demand and declining domestic production, Europe will rely on imports for two-thirds of its energy needs. Dependence on imported oil will remain extremely high, reaching 94 percent in 2030. Dependence on imported gas will rise to 84 percent in 2030, and imports of solid fuels are projected to reach 59 percent in 2030.

Fig. 2 – The Caspian Pipelines



Russia is hardly seemed reliable in the mid and long perspective. Russia's energy-driven policy, approach to gas supplies and pricing with former Soviet republics and other European countries is worrisome. "We feel very unsafe in terms of energy supplies," stated the Polish Minister of Economy in November 2006, talking about Russia's energy policy towards his country. "We respect Russia's interests, but no interest is served if Russia uses its great wealth, its oil and gas wealth, as a political weapon or that treats its independent neighbors as part of some old sphere of influence," said Condoleezza Rice speaking at the Historian's Conference on U.S.-Soviet Relations on October 22.⁴

This chapter demonstrates that energy security, like security itself, is indivisible. The consideration of one dimension of energy security, whether it be commercial, social, economic, technological or political — quickly brings in the other.

The interests of the consumers cannot be separated from those of the producers. And regional issues (the Blacks Sea, South Caucasus/Central Asia) all have a global aspect that brings in broader functional policies (such as problems of delimitation of the Continental Shelf, transportation and transit issues, and foreign investments).

Although no major war has been exclusively related to the control of an oil or gas field disputes over hydrocarbon reserves have regularly been an undeniable part of many armed conflicts. Disputes over use of nuclear energy lie at the heart of several current confrontations that have a high potential to turn into armed conflict.

The chapter addresses the clear need to reduce international tension on energy security issues. Unstable and high prices, growing competition between major development, modernization policy models and increasingly worrisome 'ideological' divides between energy importers and energy exporters reveal the crucial importance of this sector for global strategic stability and sustainable economic growth.

The central conflict-producing tension in energy security is between energy-exporting and energy-importing states. The former consider security of demand as a key priority, while the latter concentrate on security of supply.

Fear related to the (future) scarcity of oil and political instability in the majority oil and gas producing regions increase the effects of oil shocks and aggravate security concerns generally. For instance, it is very often underlined that the world economy does have enough oil to sustain current operations indefinitely. Another problem is that outside OPEC

⁴ Press Conference CNN, 2006

(Organization of the Petroleum Exporting Countries) and the countries of the former Soviet Union, there is not much oil. This makes other countries, the consumers, nervous. Further, Western oil companies have only limited control of global oil and gas reserves (owning only 15 per cent of global hydrocarbon reserves). The remaining 85 per cent is in the hands of national governments.

Moreover, even though energy markets are relatively liberalized and interconnected, we do not have accurate information about reserves and the energy trade. Transparency is indeed very important, but no actor wants to give the other actors sensitive information.

High oil prices affect social stability in the major energy exporting countries. Terrorist attacks are increasingly focused on the energy producing assets and transportation infrastructure. Also, some states try to use energy as a ‘political weapon’ or at least as a source of competitive strategic or foreign policy advantage.

In order to address those issues I tried to propose either a redefinition or more precise definition of the concept of the “energy security”⁵.

This dualism affects objective ‘situation analysis’ and lead countries to ‘adopt markedly different strategies when faced with similar external circumstances’. In this particular region, “securitization” of energy has resulted in a number of negative trends:

- Geopolitics-based bilateral energy alliances are weakening global collective action to reduce other security threats.
- State-to-state relationships on energy access are increasing instability in producer states and result in long-term poor economic performance of developing countries with high dependency on natural resources.
- Strategic rivalry over access to energy resources decreases trust and makes cooperation between consumers and producers rather difficult.

As it is seen from basic analysis, Europe’s energy security is hardly ensured, therefore, significant steps to improve the situation are necessary.

Moreover, the EU should cooperate with NATO in implementing its energy policy. For that, EU-NATO coordination mechanisms, including high level joint Council, planning and reaction tools need to be developed. There are three elements of NATO, which make this necessary.

⁵ Barton, B., C. Redgewell, A. Ronnel and D. Zillman, *Energy Security. Managing Risk in Dynamic Legal and Regulatory Environment*, Oxford: Oxford University Press, 2004

One is the membership of the United States. The U.S., sharing very similar values has the same position as Europe on the necessity to diversify energy supplies. It has arguably the most successful energy policy, which effectively ensuring the country's energy security in the long run. Having United States institutionally and policy-wise engaged with common European energy policy can create a strong transatlantic energy link. Second is the Turkish membership to NATO. Turkey is a significant transit country for the Caspian oil and gas, key to the diversification of energy supplies to Europe. Given the current uneasy relations between EU and Turkey on several issues, including membership prospects and the matter of Armenia, close EU-NATO energy coordination can smooth the cooperation venue and boost alternative energy flow to Europe.

Lastly, NATO is a military alliance and current global trends require military actions on unconventional ground, including fighting terrorism. Terrorists tend to have soft targets, including pipelines, and NATO can play an important role as a primary response organization. The EU may need a long time to have its own capabilities to deal with terrorist threats on energy infrastructures, and it would not be cost effective as it would be a duplication of efforts and not cost-effective.

Forge stronger partnerships with emerging significant suppliers: Here, Kazakhstan and Azerbaijan are amongst the first to consider.

In May 2008 the U.S. Energy Information Administration projected that by 2015 Caspian basin energy production could reach 4.3 million barrels per day, concluding that in addition to the region's proven reserves of 17 billion to 49 billion barrels, (comparable to Qatar at the lower estimate and Libya on the high end), the region could contain an additional reservoir of hydrocarbons up to 235 billion barrels of oil, roughly equivalent to a quarter of the Middle East's total proven reserves. The Caspian's potential natural gas reserves could yield another potential 328 trillion cubic feet of gas.

The EU Action Plan suggests improvement of relations with these countries, but it is not enough. More integration of these nations into the European and Euro-Atlantic structures is needed to lead them to further develop their political, economic structures, and very importantly, a stronger civil society. The more Kazakhstan and Azerbaijan integrate with the West, the more secure the flow of Caspian energy resources to the Euro-Atlantic area will be.

Last but most importantly, climate change is the most pressing security threat facing the world. Therefore, achieving climate security must become a fundamental priority in energy

security policies⁶. To come close to that situation, there is a pressing need for much greater political coherence, everywhere from the ground level of energy production to new institutional structures at the global level, with special attention being paid to more robust investment signals for energy businesses to mitigate climate change much more rapidly than is the case now.

⁶ Edenhofer, O., G. Luderer, C. Flachsland and H. Fussler, *A Global Contract on Climate Change*, Potsdam Institute for Climate Change Impact Research, Policy paper prepared for the conference on A global contract based on climate justice: the need for a new approach concerning international relations, Potsdam, November, 2008

2.1. The security of supply in the current energy debate

The concept of *energy security*, mainly *security of supply*, is making a big comeback on the European scene. The recent events and energy crises have shake the European Union into debating the development of a comprehensive European Energy Policy.

Europe's strong feelings of insecurity has increased tenfold due to the last Ukrainian-Russian gas dispute; the tremendous increase of energy prices; the uncertain and controversial state of energy reserves; the disequilibrium between the increase of demand and the contraction of the offer; and finally its reliance on chronically unstable energy suppliers.

The issue of security of energy supply has become a major long-term geopolitical, economic, environmental and social concern for Europe.

Although Europe is actively pursuing various methods of weaning itself off dependency on single supplier gas, it seems that the demand for gas is only going to grow in the medium term.

In the world of security of supply, gas is best left as a tradable commodity on the open market. Some predictions state that by 2020, Russia could have the capacity to supply up to 33 percent of Europe's gas needs. In the meantime, the IEA predicts that by 2030, the EU's demand for gas is going to increase by 1.3 per cent annually till 2030⁷ increasing from 541 billion cubic meters in 2005 to 744 billion cubic meters in 2030. By doing so, producer confidence is increased, consumer confidence increases, and a disruption from either side will result in painful consequences that the other will want to avoid at all cost, without exception. Activities in realizing this possibility are already seen in the completion of the Blue-Stream pipeline, and in the planning and development of the Nord-Stream and South-Stream gas pipelines.

Securitizing an issue such as gas or oil, in the face of increased demand and increased capacity of one of your producers to supply this demand, will only serve to increase the potential for conflict. In the face of very real 'hard' security considerations at play in the heartland of Europe at the moment, the danger in securitizing energy lies not only in the fact that it could become a catalyst in exacerbating existing security issues, it can become "cases belly" when actors such as NATO would become involved. The Ukrainian and Georgian ambitions in becoming member-states of NATO, whilst at the same time being deeply divided

⁷ International Energy Agency, World Energy Outlook 2007

with secessionist factions being supported by Russia serve to muddle the already messy energy and pipeline politics in the area. Western responses to these localized conflicts with international energy dimensions are often rash in light of the nuances needed in dealing with these conflicts, as they have very different dynamics and need sensible responses that reflect the realities on the ground. At the same time, terming Russia a necessary evil in our energy needs is unnecessary; yet, there are many forces at work in Russia which are cause for worry. When observing the recurring theme of inter or mutual dependency, if Russia decided to push its energy lever too far – continuing the metaphor of the introduction – it might end up playing Russian roulette and shooting itself with its only bullet. Europe, on the other hand, must decide whether it is more exposed to a dependency on Russian gas or to intense competition with the demands of the explosively growing economies of the developing world.

Fig. 3 – Gas Pipelines



In this chapter I will try to explain the issues mentioned above. In this unfriendly environment, the EU urgently needs to develop an enhanced common approach to the security of energy supplies and look for new means to reduce its external energy dependence.

The concept of energy security has indeed been turned to fit any case. Different consumer, producer, developed or developing countries, being dependent or not on energy imports, have different priorities, interests and needs. For some States, it is important to secure energy supplies to their markets, whilst for others it is more crucial to secure access to the European market for their energy resources, and some seek to stabilize energy prices at a high level, others at a low level. However, it remains difficult to view the European Union as a vast homogeneous consumer and importer block⁸.

The security of energy supply is referring to the availability of energy to be found in sufficient quantities and at affordable prices at all times. This issue could be very complicated because it brings together a variety of economic, geopolitical, geological, ecological and institutional factors, but also breaks down into multiple (global, regional, national and individual consumer) levels of reference and analysis.

In addition, one's perspective on energy security depends on one's position in the energy supply chain. For exporters the most important part of the concept is security of demand for their energy resources or, in other words, security of revenues from the energy market. Earning petrodollars is very often a prerequisite for producers' economic security—and hence also for their own energy security. Most consumers, in contrast, focus their security concerns on the challenge of import dependency and the risk of supply disruption.

In major energy-consuming countries, accordingly, the key security issues debated include diversity of supply, access to energy resources (often entailing competition with other major energy consumers), stable oil prices, and security margins for emergencies and the introduction of alternative energy sources. Other elements of the energy supply chain also interpret energy security differently: for commercial companies a main component of security is a stable legal investment regime in producer countries.

States' activities aimed at ensuring energy security supply are an important element in their foreign policy and foreign relations. However, many features of the international environment—the stability of producing regions, market supply and demand and price trends, the state of consumer–producer relations, consciousness of potential challenges and threats to energy security, and so on—influence national energy strategies and lead states to adopt different policies and use different tools at different times.

⁸ Barton, B., C. Redgewell, A. Ronnel and D. Zillman, *Energy Security. Managing Risk in Dynamic Legal and Regulatory Environment*, Oxford: Oxford University Press, 2004

Countries' efforts to assure access to natural resources affect security dynamics particularly in those parts of the world that are crucial for global energy security, and may lead both to regional alliances and to conflicts between major energy-consuming and energy producing countries. Thus, contemporary structural changes in the energy market have serious geopolitical implications.

Competition for resources is not new or characteristic of our times. Together with competition for territory, it lies at the root of most violent conflicts in history.⁹

In recent years the interruption of energy supplies is as much a security threat as is military action. Successfully countering such threats necessitates that Member States stand together when dealing with other actors. However, Member States have pursued a multitude of often-conflicting external energy policies that has served to increase the vulnerability of the EU as a whole.

Since Russian gas cut-off to Ukraine, there has been increased awareness that dependence on Russia has increased Europe's geopolitical vulnerability. Up to this point, many European leaders have preferred not to discuss the geopolitics of energy, instead delegating this portfolio to their economy ministries. However, their Russian counterparts have not minimized the importance of this issue, instead preferring direct involvement at the highest levels. Given the substantial role of the Kremlin in devising a political energy strategy, a Russia-focused energy security needs to be discussed at corresponding levels within Europe—especially in a foreign and defense policy context.

This chapter develops a conceptual framework for approaching issues relating to the security of energy supplies. It is built around notions of flexibility, diversification, impact reduction, rather than an excessive focus on any single measures of risk. Although we will be talking about “measures of risk” for reasons of readability, it is essential to understand that the policy relevant parameters are the economic and social impacts of interruptions to energy supply. This has four crucial implications.

First, the absolute reduction of individual risk parameters – however eye-catching, media-friendly and desirable in their on right – are of limited interest. What is important is their impact on the ground in the interplay with other risk factors. An important issue is thus the question, how do different dimensions of risks balance each other out? Let it be said right

⁹ Behrens, A. and C. Egenhofer, *Energy Policy for Europe. Identifying the European Added Value*, CEPS Task Force Report, CEPS, Brussels, 2008

away: the market – to the extent that it is liquid, transparent and competitive – is an excellent mechanism for pool and redistributing different risks to supply.

Second, notions of “energy independence”¹⁰ are not only absolutely, they can be dangerous. While no one seriously advocates absolute energy independence, decreased energy dependence (occasionally equated with the political or military control of resources) is still considered a positive thing. On the first level of analysis, this implies paying the opportunity cost of not participating in the international division of labor in the form of high prices, high environmental pollution or both. On a second level of analysis, this implies a self-centered inward-looking attitude willing to invest politically (or even militarily) in securing scarce resources. Such a race for resources would squander the rents of natural resources available to producers and consumers.

Third, high prices are not the problem, but large and sudden price increases and physical interruptions are the problem. Much desired high economic growth inevitably means higher energy prices (nobody will want a repeat of the Asian financial crisis that did wonders for energy prices). In an interconnected economic world, one country’s growth cannot be separated from another’s. Neither can one country’s energy demand and its impact on prices be separated from another’s. Focus should be on the transparency and liquidity of the market, which limits the scope for any single information affecting prices and on the security of physical supplies through strong contractual frameworks. Energy taxes, while raising end-use prices, can also shield consumers from variations in wholesale price. The *volatility* of prices instead (as opposed to their level) can skew investment choices and constitute a barrier to the entry of technologies with high fixed costs such as nuclear energy.

Fourth, manage expectations and perceptions as well as facts. Things need to be put into perspective both with respect to time and with respect to economic impact. The greatest disservice politicians did for nuclear power was to hold out the expectation it would produce power “too cheap to meter”. Energy has a cost and will always have; given that increasing growth and demand will progressively exhaust cheaper deposits prices will rise – the faster we grow, the faster energy prices will rise. As long as private economic agents are prepared for this fact of modern economic life, they can begin to deal with it.

¹⁰ Clingendael International Energy Programme, Study on Energy Supply Security and Geopolitics’ Final Report, 2004

Traditional definitions of energy supply security combine a short-term notion of the continuity of physical supplies with long-term notion of “affordable” prices, “competitive” prices” or “adequate prices”. More modestly many economists would settle for prices corresponding to long-term average cost. The difficulty is that these are almost impossible to ascertain in varying technological and geological conditions. In addition, the factor time has an enormous influence on these notions. For practical purposes, it is often useful to take market prices as the real marginal cost of supply including any risk due to political, technological or commercial uncertainties.¹¹

The risk management approach to the security of energy supplies argues that supply security is an issue dependent on the risk-adverseness of consumers, which varies widely between countries. Other things being equal, American consumers prefer lower prices and relatively higher risk, whereas European customers prefer higher prices and relatively lower risk. Its focus is thus not the absolute level of energy prices but the size and impact of changes in energy prices.

In the perspective, protect risk-adverse energy consumers from unexpected changes, an energy system shall be judged by its ability to withstand shocks and to adapt; the resilience (flexibility, elasticity) of the system thus becomes key. Response options that can be drawn upon for different time horizons such as emergency response systems consisting of physical stocks as well as financial funds must be created to be drawn upon in times of crisis. Most importantly, a framework for insurance and for allocating risk efficiently between private players (quantifiable risk) and public players (non-quantifiable risk or uncertainty) must be created given that markets cover risk very well and uncertainty very badly.

Energy supply security in fact is very close to the notion of the “sustainability” of the energy system. In conformity with the precautionary principle, investing in supply security implies to incur current costs in order to avoid greater future cost. European consumers would prefer lower risk and higher prices. The insurance idea is so important because investments in the production, transport and consumption of energy are very long-term in nature and thus impose by default a low degree of flexibility and a high degree of intrinsic investment risk. In addition, much of the energy sector is built around networks. Thus, single technical defaults

¹¹ Egenhofer, C. and T. Legge, Security of Energy Supply. A Question for Policy or the Markets?, CEPS, Brussels, November, 2001

will affect very large numbers of users. This reinforces the demand for active, forward-looking, even if costly risk management.¹²

At all times, safeguarding and expanding liquid and transparent energy markets must be of primary concern to policymakers. As pointed out above, markets are excellent at managing quantifiable risk. They rely, however, on governments to provide insurance for non-quantifiable risk and for establishing the frameworks in which they evolve. Unfortunately, the existence of such frameworks cannot be taken as a given in all parts of the energy world and multilateral support for them must be created wherever possible. Bilateral co-operations and contracts are in no way counter to this observation and are necessarily part of a global network of functioning energy markets. However, no single bilateral relationship should be allowed to take precedence over the working of the system as a whole.

At the same time, there is no insurmountable opposition between bilateral and multilateral approaches, or between “contract” and “competition”. Bilateral contracts between individual parties are the essence of any functioning market.

There is, of course, ample reason to assume that in the energy world those conditions are not fulfilled. (1) Indivisibilities in the construction of projects, each one of which might have features peculiar to itself, prevent the size of contracts falling very low. (2) Gaps in information, transaction, geopolitical concerns and commercial rivalries prevent re-contracting. Size per se, however impressive from the point of view of everyday experience, is not a critical issue. In policy terms, the second point is the more important one. For a functioning market to exist, each buyer (seller) must find himself confronted with a multitude of other potential sellers (buyers).

Again, the point is not that such well functioning energy markets already widely exist. The point is that Europe and the world have everything to gain in moving towards them by making the terms of contracts as transparent as possible (for instance, through international agreements on disclosure), working wherever possible with open tenders.

They can become a threat to the working of the global energy system if they explicitly aim at excluding third parties and mix commercial logic with political logic.

From a theoretical point of view, any desired level of stability of energy supplies can be achieved in the long run; the question is “at what price and at which environmental costs?” Europe could easily cover its electricity production by a mix of nuclear, carbon and renewable

¹² Larsson, R., *Tackling Dependency: The EU and its Energy Security Challenges*, Swedish Defense Research Agency, Stockholm, 2007

energies without relying on natural gas. Attractive mass transport options and bio-fuels could eventually substitute for oil imports. Clearly, this would entail at the current stage of technological development unacceptable economic costs. So why pose the question? Because the key challenge in Europe is to make the *political* choices between the competing objectives of security of supply, environmental objectives and cost minimization. The current focus on improving is too much informed by trying to avoid these choices. Energy efficiency is the result of an aggressive high-price energy policy; it cannot substitute for such a policy by itself.

Energy security is one of the highest-ranking issues in both national and international debates. The focus on it is determined by several factors. Trends in the world energy market are important, including the rising global demand for energy, a tight oil market, high oil prices, rising import dependencies and the prospect of future scarcity of oil and gas.¹³

The growing importance of energy security issues will have many geo-strategic repercussions. The struggle for access to and control over energy resources is likely to exacerbate tensions among the main global energy market players, which may even lead to conflicts.

The three basic sources of such tension are: (a) the divergent energy interests of consumer countries and greater competition between them in world energy markets; (b) consumer – producer relations and fears of the use of energy as a weapon; and (c) unsolved territorial disputes over ownership of energy resources. On the whole, the worldwide focus on energy security will significantly raise the strategic importance of all geographical areas with rich oil and gas reserves.

At the same time, however, while the nature of states' concerns has been similar to those already apparent in the 20th century—the rise in import dependencies, security of oil and gas supplies, the unstable political situation in producer regions, and fears that oil or gas may be used as a political weapon—the perception of how to deal with challenges to energy security has been changing. Both national and international approaches to energy security need to be further rethought. Nationalistic approaches to energy security, such as can be seen in many consumer and producer countries today, are not a good recipe for handling global energy security needs even leaving aside the risk of their leading to conflict. Wider international cooperation could build more trust and release tensions between major market players, thus improving the future security of oil and gas supply for all.

¹³ Koehane, Robert O., Multilateralism: an agenda for research. *International Journal*, v. 65, no. 4, Autumn 1990, pp. 733-736.

It is important to stress that in a field like energy, international cooperation is not opposed to or incompatible with competition. At present it is impossible to say which of these forces will prevail in the energy market in future. They could, of course, coexist, but would then need to be better balanced.

Future international cooperation, responding to such imperatives, is likely to transform the present institutional energy market order. New institutions and cooperation mechanisms may be established by consumers themselves, or together with producers (as happens today in bilateral or multilateral consumer–producer dialogues).

Finally, it is worth noting that only a breakthrough in the development of alternative energy sources, and particularly in alternative fuels for transport, could significantly change parts of the above forecast. Growing environmental concerns combined with increased risks of disruption to future oil and gas supplies may result in greater attention being given to the issues of development of nuclear energy, renewable energy sources and biofuel readability el production.

Progress in these fields, too, will depend not only on national energy policies but also on international cooperation, especially in the sphere of know-how exchange. However, the development of alternative energy sources—nuclear energy in particular—will create new security concerns even while it reduces present energy security risks.

2.2. Specific Supply Risks for the Major Energy Sources

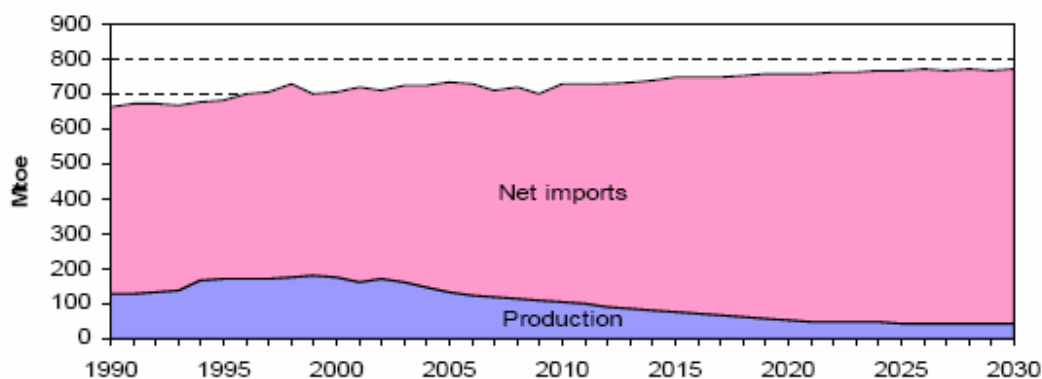
1. Oil

Oil is an energy source of critical importance for the European Union. Its relevance is especially related to transport, followed by the industrial sector. Oil use for power generation has declined since 1990 thanks to fuel switching to natural gas and, to a lesser extent, to renewables. This trend is expected to continue: oil will be used as a fuel only in niche markets but it will continue to dominate the transport sector. The overall EU transport demand is indeed projected to increase by 18% by 2020 and the European target of replacing 10% of transport fuel use with renewables energy sources – even if it is reached – is expected to only moderately reduce the European dependence on oil with incontrovertible negative impact on climate change.¹⁴

EU-27 oil demand (crude oil and oil products) increased from 665 million tons of oil equivalent in 1990 to 731 Mtoe in 2006 (see Figure 4). Notwithstanding this relatively small increase, the gap between internal demand and supply is widening. Today, domestic oil production in the EU is less than in 1990 and only covers 14% of EU consumption. The rest of the oil demand is met by imports. A third of crude oil imports in the EU come from Russia, followed by Norway (15%), Saudi Arabia (9%), Libya (8%) and Iran (5%) (IEA, 2008) (see Figure 5). Although oil imports from Norway are not a source of concern since the country belongs to the European Economic Area, the other suppliers are sometimes perceived as a potential source of insecurity for Europe's energy supply. Import dependence is not necessarily risky if a relatively well diversified source of supply origins exists, but some EU members, such as Slovakia, Poland, Hungary, Lithuania, are almost completely dependent on Russia for oil imports.

¹⁴ Egenhofer, C. and J. Jansen, *A Timetable for harmonization of support schemes for renewable electricity in the EU*, European Review on Energy Markets, Vol. 1, No. 2, April, pp. 57-83., 2006

Fig. 4 – EU-27 oil production, consumption and net imports¹⁵



Source: Eurostat for 1990-2006, EC (2008) for 2006-2030.

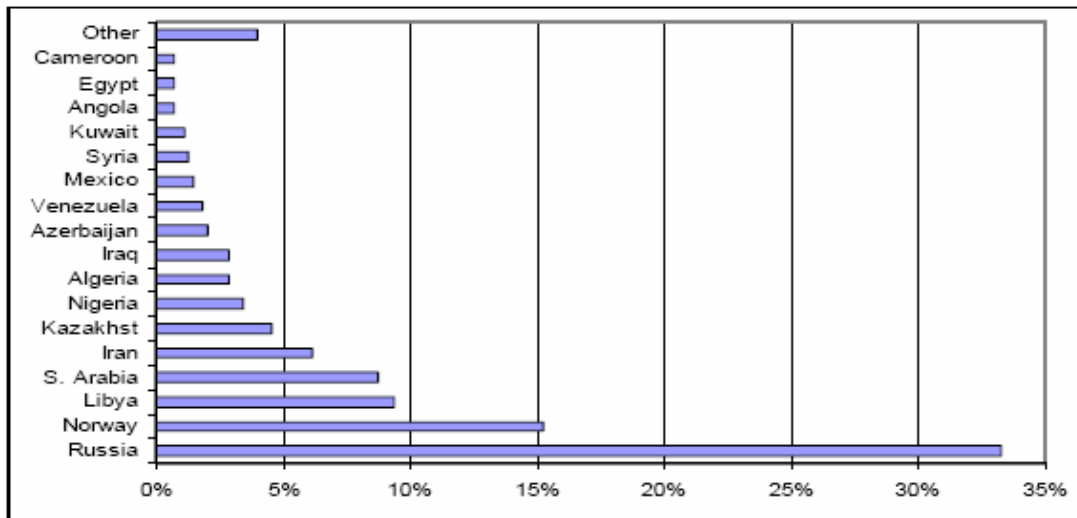
While small discoveries continue to be made in a number of EU countries, it is unlikely that the rate of import dependence will decrease in the near future. By 2030, oil production in the EU is expected to be only one-third of today's level. Yet, according to the latest EC estimates¹⁶ the demand in the EU-27 is expected to reach some 770 Mtoe by 2030.¹⁷ As a result, net oil import requirements of the EU will increase by 20% in the next two and half decades, reaching 730 Mtoe in 2030 (or almost 95% of domestic consumption), compared to 608 Mtoe in 2006. Russia will remain the biggest supplier of oil to the EU, although only a slight increase in its exports is expected. Libya and Saudi Arabia will both increase their export share to Europe. Norway, on the other hand, will become less important by 2030 due to the depletion of its oil reserves, which already peaked in 2001. By 2030, OME expects Norwegian oil exports to be only 10% of these of today. Also, EU member states will receive less crude oil in the future from the Americas, mainly because of increasing oil needs in the US, whose demand will preferably be met by imports from other countries in the American continent. This means that Europe will become more dependent on Russia, the Caspian region, Africa and the Middle East for oil imports.

¹⁵ In the graph, Norwegian's supplies are considered as net imports. Taking into account that Norway is part of the European Economic Area, the picture looks slightly different: Enlarged EU 'domestic production' is in fact 15% higher than stated here.

¹⁶ "European Energy and Transport Trends to 2030 – Update 2007", Directorate General for Energy and Transport, European Commission. April 2008.

¹⁷ However, EU projections do not yet include the effects of planned and soon to be adopted climate change measures such as stringent emissions standards for cars.

Fig. 5 – EU-27 imports of crude oil in 2006 (intra-EU-27 trade excluded)



Source: Calculated from Eurostat data.

This expected increase in oil imports is at the centre of Europe's energy policy debate. Because of the existence of a number of oil suppliers around the world and the global nature of the oil market, the real concern for Europe is not increasing oil import dependence *per se*, but the risks related to it: the vulnerabilities of transporting oil, the possible rivalry over oil resources around the world, and the oil price.

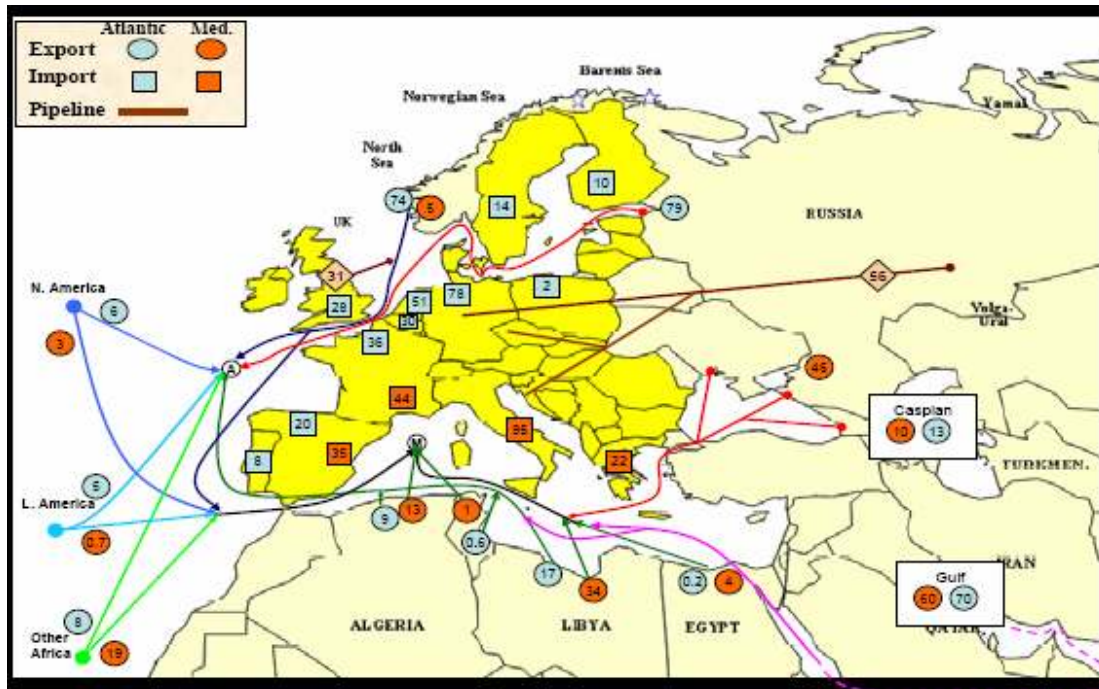
1.1 Oil transport risks

Over 85% of crude oil imports to the EU are transported by sea while only 14% are transported by pipelines. Pipeline imports come from Russia through the Druzhba North and South pipelines and from Norway through Norpipe (to the UK). As a consequence of falling Norwegian crude oil production and exports, the share of Europe's pipeline imports is expected to decrease to 11%. However, pipeline oil imports from the Former Soviet Union region will increase, adding to the security of supply risk for two reasons. The first reason is related to the capacity constraints of the Druzhba pipeline. Its transport capacities are fully exploited and they will need to be nearly doubled to meet Europe's import needs. The second risk is linked to Russia's possible supply interruptions to the states of the Former Soviet Union. If supply cuts to Western countries are not a credible threat due to their relatively diversified supply sources, some central European countries with a quasi-total dependence on Russian oil exports have some reason to be fearful. In particular, land-locked countries with a high dependency on

Russian oil exports, such as Hungary, Slovakia and the Czech Republic, are vulnerable to technical supply interruptions or to Russia's use of energy as a tool of political pressure.

In this context, however, existing IEA and EU stock policies is an important assurance tool and minimize the possible geopolitical threats from Russia.

Fig. 6 – Major EU crude oil import routes, 2005 (in million tonnes)



Source: OME (The Mediterranean Energy Observatory).¹⁸

But the majority of Europe's oil imports are shipped by tankers (see Figure 3). Nearly 60% of seaborne crude oil imports to Europe go to the North of Europe (of which Rotterdam is the most important) while over 40% go to the Mediterranean ports of the EU. According to OME estimates, in 2030, more than half of EU crude oil imports will be delivered to the Atlantic ports of the EU, while only 35% will go to its Mediterranean ports. Atlantic ports will gain importance in share mainly because of two factors. On one hand, the increase in demand of northern EU countries (especially from the UK and other countries relying on decreasing Norwegian crude) will push northern countries of the EU to rely more and more on oil from the Middle East and Africa. On the other hand, the foreseen decrease in demand, especially in Italy, will limit the demand of Mediterranean countries. However, most of the import volumes to Atlantic ports will have to transit through the Mediterranean.

¹⁸ OME, 2008

Although shipping oil has the flexibility advantage of allowing both exporters and importers to re-direct their exports/imports, this means of transport is vulnerable to the so-called ‘chokepoints’, namely the narrow sea-lanes through which the oil tanks have to transit. The 106 million tons of crude oil shipped every year from the Middle East to Europe (including Turkey), have to pass through different chokepoints: the Bosphorus linking the Black Sea to the Mediterranean Sea, the Bab el-Mandab Strait from the Arabian Sea to the Red Sea, and the Suez Canal together with the Sumed pipeline connecting the Red Sea to the Mediterranean Sea.

Shipping accidents, and some pirate attacks, could seriously impede transport on these routes, with significant impact on oil supply and prices (Willenborg, Tönjes & Perlot, 2004).¹⁹ Yet the risks related to oil transport – either by pipelines or tankers – are limited compared to the geological challenges that the oil sector is currently facing.

1.2 Increasing competition for global resources

Europe’s security of oil supply mainly depends on the future equilibrium between global demand and supply for oil and the related competition for available resources. Today, the world demands 86 million barrels of oil per day – i.e. 1000 barrels a second – and, according to the IEA, EIA and OPEC, oil demand is expected to rise by 35% until 2030. Yet about 42% of this increase will come from China and India and, to a lesser extent, from

¹⁹ The Bosphorus Strait represents one of the most important supply and environmental vulnerabilities for Europe, especially for Southern countries. The Strait is less than 1km wide at its narrowest point and has several blind turns that make its waters difficult to navigate. With 5,500 oil tankers transiting the Strait every year, the threat of accidents is real (Willenborg, Tönjes & Perlot, 2004). The Black Sea has always been the largest outlet for Russian oil exports but the volume of oil passing through it increased further since the collapse of the Soviet Union, adding to the accident record of the Strait. There are fears that the projected increase in Caspian Sea exports might exceed the ability of the Turkish Straits to accommodate the tanker traffic. However, the risk could be mitigated as some of the planned projects bypassing the Strait should be realised soon, such as the BTC oil pipeline, which opened in 2006 (EIA, World Oil Transit Chokepoints). Some of these projects include: the connection between the Romanian port of Constantia and the Adriatic ports of Omisalj and Trieste; the oil pipeline project from Constantia or from the Bulgarian port of Bourgas, either through Macedonia to the Albanian port of Vlore, or to the Greek port at Alexandroupolis; the reversal of the Odessa-Brody oil pipeline; the Samsun-Ceyhan oil pipeline; and a shorter oil pipeline from the Turkish port of Kiyikoy to Ibrikaba or Saros. All these projects would help to decongest the Bosphorus but none of them are currently among the priorities of the EU (Nies, 2008).

The other key chokepoint for Europe’s oil imports is the Bab el-Mandab Strait. The closure of this passage – through which 3 million barrels are channelled every day – would force tankers from the Persian Gulf to navigate around the southern tip of Africa instead of passing through the Suez Canal. This would add greatly to transit time and cost, shrinking spare tanker capacity. The fact that security remains a major concern in the Strait was proven by the terrorist attack on the French-flagged tanker Limburg in October 2002 (World Oil Transit Chokepoints). Close to the Bab el-Mandab Strait is the Suez Canal and the Sumed pipeline, which are very important for Europe’s oil imports from Saudi Arabia. A closure of the Suez Canal or the Sumed pipeline would cause oil tankers to navigate around Africa’s southern tip, making the route much longer and forcing a reduction in tanker capacity with an overall effect on oil import prices (Willenborg, Tönjes & Perlot, 2004).

transition economies and oil producing countries where the persistence of government subsidies does not provide incentives to contain energy demand.²⁰ More specifically, the annual increase in oil demand is expected to be 3.6% in China, 3.9% in India, 1.9% in the Middle East, 2.2% in Africa and 1.6% in Latin America, but only 0.1% in Europe. Accordingly, by 2030, the number of vehicles on the world's roads will double (up to 2.1 billion) but Europe's share of the increase in world transport oil demand will only be 3% of the total. The global increase in oil demand would therefore require an additional production of more than 1 million barrels of oil per day each year up to 2030. Would the oil industry be able to provide this level of production in the near future, thereby allowing Europe to meet its energy demand?

A key concern for the oil sector today is indeed the diminishing inventory of oil. About half of world production comes from 116 giant fields, each producing more than 100 thousand barrels per day. Yet the majority of them are 50 years old and their resources are depleting (e.g. Ghawar in Saudi Arabia and Burgan in Kuwait). The consequent loss in production is partly (1/4) offset by newly discovered oil fields whose size is nevertheless decreasing. The data shows that there is still plenty of oil in the ground but the problem is how to recover it. Today's average global recovery rate is only about 35%, which means that 65% of the world's discovered oil is left in the ground. Although new technologies and exploration techniques may be able to increase the recovery rates and make unconventional oil (such as tar sands, extra heavy oil and oil shale) become conventional, the era of 'easy oil' seems to be over.

This is what the peak oil debate is about. On the one hand, there are the pessimists who argue that unconventional resources will be able to postpone the oil peak until no later than 2015. Then, they foresee oil prices to skyrocket causing economic issues, social and environmental collapse, massive dislocation and a dying civilization.²¹ On the other hand, there

²⁰ Between 1999 and 2007, Middle East domestic oil consumption grew on average 3.9% per year, while OECD growth rate was only 0.4% (Stevens, 2008). Domestic oil demand in Middle Eastern countries is expected to more than double by 2030, mainly due to high population and income growth. This is especially the case in Saudi Arabia, which will remain the biggest oil consumer in the region and, in 2030, despite its production growth, will have an oil export potential not much higher than that of today. In Russia, although weak demographic developments will help reduce the growth of oil consumption in the future, the high level of energy intensity is also expected to contribute to a relatively high level of oil consumption. Moreover, in most of the African countries, demand is expected to more than double but, due to the increased use of gas in power generation and in residential sectors, as well as government policies to free more oil for exports, export potential over the 2004-2030 period will mirror production. This will not prevent some African countries – such as Egypt – from becoming net importers as soon as 2010. Although some of these areas seem distant and therefore irrelevant for Europe's security of oil supply, they are closer than one might imagine: regardless of where they are located, rising domestic consumption in major oil producing countries seriously constrains their ability to export to international markets, putting pressure on oil volumes and prices (Stevens, 2008).

²¹ The most relevant representative of this group is the International Association of the Study of Peak Oil and Gas (ASPO).

are the optimists who believe that unconventional oil sources would be able to offset the decline in conventional oil sources meeting the future increase in oil demand; to them, the oil peak will not be visible before 2030 (Karbuz, 2007).²² Assuming that a peak is inevitable, it is difficult to tell which view is correct because of different methodologies, data, definitions and assumptions used (Mabro, 2006)²³, but both foresee a future – sooner or later – of a world without oil.²⁴ Yet peak oil may become irrelevant the moment the world engages in aggressive climate change policies.

Oil companies are struggling to replace their reserves, not only for geological reasons but also for pecuniary and political constraints. Because of spreading ‘resource nationalism’ in oil producing countries (such as Venezuela, Kazakhstan, Russia, etc.), IOCs are increasingly facing strong competition with national companies. The latter are claiming their rights, especially on easy-access reserves, pushing IOCs towards remote and geologically complex areas (Karbuz, 2007)²⁵.

1.3 The impact of oil prices

The oil price has recently decreased towards \$40 per barrel. Before oil prices plummeted in October 2008, the latter had been the 7th consecutive year of crude oil price increase: the barrel passed \$100 at the end of 2007 and reached its peak in summer 2008 (\$147). The growth of oil prices of the last years has mainly been caused by a narrowing gap between supply capacity and demand for oil. As mentioned above, booming economies – such as China, India and Middle Eastern countries – are the driving force behind high global demand for oil and the relative increase in oil prices. On the supply side, the market was tight, the investment was low and the technical and geological hardships were numerous. Other factors, such as the weak dollar, financial speculations on oil driven by large trader banks and hedge funds, rising expectations of a possible oil-peak, political tensions in the Middle East, and unexpected weather conditions also played a role in pushing oil prices up. However, the current

²² The main supporters of this view are the US Energy Information Agency, the International Energy Agency and Cambridge Energy Research Associates. These two views are also divided on whether the decline in global oil production will be preceded by a peak or a plateau. The optimists generally think that before a peak the world will experience an ‘undulating’ plateau. The pessimists are divided between those who talk about a ‘pumping plateau’ and those who expect a sharp decline after the peak.

²³ Mabro, R., *the Peak Oil Theory*, Oxford Energy Comment, Oxford Institute for Energy Studies, Oxford, 2006

²⁴ Mabro (2006) identifies three different sets of problems. First, the definition of important concepts such as crude oil, production, reserves and resources is not always the same. Second, estimates of proven reserves may be understated or overstated depending on who delivers them, e.g. oil companies or OPEC. Third, some use recoverable reserves to make their estimations, others use proven reserves.

²⁵ *Idem* 7

oil price slowdown shows that the impact of some of these factors is temporary rather than structural. Negative expectations for the future economic growth and energy demand growth have been the main driver behind the oil price collapse.

Jan-Hein Jesse and Coby van der Linde (2008) argue that, in the long-term, oil prices are expected to be high for two main reasons. First, “there is no credible cushion of spare capacity in the core OPEC countries: (...) although spare capacity has improved since 2004, it is still fragile, uncertain and not perceived as adequate”. As a consequence, when unexpected events occur (e.g. hurricanes in the Gulf of Mexico, terrorist attacks on oil pipeline in oil-producing countries in the Middle East or Africa), there can hardly be a response in volume, which has to be compensated with an equivalent upward pressure in the price of oil. This trend is reinforced by the conviction that global oil consumption will continue to increase putting supply under pressure. Moreover, the two authors explain that the demand-supply tension is aggravated by the problem of under-investment in the upstream sector, especially in those countries – such as Russia and the OPEC states – where access to international oil companies is becoming more and more limited. Having no alternative but to invest in remote and difficult areas, international oil companies are contributing to drive up the costs of the marginal oil barrel, creating further pressure on its price.²⁶ To others, the extreme oil price situation of 2008 was nothing but a speculative bubble. R.S. Eckaus (2008)²⁷ from MIT University, argues – for example – that “hedge funds have been very active in the oil market and their activity, along with other speculators, has raised the volume of oil transactions far above the volume warranted by ordinary commercial transactions” causing a prolonged increase in oil prices. According to Eckaus (2008), only a “strong dose of reality” could break the bubble. Some may indeed argue that the ongoing financial crisis triggered the burst of the bubble leading to a strong decrease in oil price prices. However, strong criticisms of the “speculation theory” exist in literature.

Whichever view on oil price mechanisms is correct; it does not change the fact that oil price volatility can have a negative impact on the welfare of energy-importing countries, including Europe. Generally speaking, an increase in oil prices affects the price of many other energy carriers, especially, and most directly natural gas. A higher than expected increase in oil, prices leads to increased costs of production of all other goods requiring energy for

²⁶ Jesse & van der Linde, *Oil Turbulence in the Next Decade. An Essay on High oil Prices in a Supply-constrained World*, The Clingendael Institute, The Hague, 2008

²⁷ Eckaus, R., *the Oil Price Really Is A Speculative Bubble*, Centre for Energy Centre for Energy and Environmental Policy Research, MIT Energy Initiative, and Sloan School of Management, 2008

production and transport. The outcome is additional inflation (“imported inflation”) largely regarded by economists as harmful to the overall economy.²⁸ On the other hand, a decrease in oil prices is generally a symptom of a global economic slowdown, and mainly affects energy producing countries by reducing their revenues. With profits reduced, their incentives to invest in the energy sector decrease. Also, with low oil prices, a long-term fuel substitution becomes less likely and the economic incentive to move towards a low-carbon economy decreases. Under these circumstances, the security of energy supply can in fact worsen in the long-run.

2. Natural Gas

Gas and oil reserves often occur together and are concentrated in similar countries. They also share some economic characteristics such as relatively high fixed upstream costs and physical transportation constraints to reach the market. However, gas has its own features. First, it is mostly transported by pipeline unless it has to cross oceans or run over long distances (in this case LNG is preferred). The pipeline physical link creates a two-way dependence, or interdependence, which is the essence of the security of supply/security of demand issue for natural gas. Second, gas markets are regional rather than global as in the case of oil (increasing LNG trade may change the *status quo*). The regional nature of gas supply matter: depending on where the sources of supply are located and where demand is concentrated, dependency is different. Finally, gas is the fuel of choice for electricity generation and it has several potential substitutes, instead, oil is mainly used for transport and it cannot be replaced anytime soon.²⁹ Given these differences, it can be argued that the concept of security of supply and the related risks for natural gas differ significantly to the case of oil. The IEA defines the security of gas supply as “the capability to manage, for a given time, external market influences which cannot be balanced by the market itself”. In the short term, “security of gas supply covers the adequacy of supply and capacity to avoid unforeseen interruptions of customers” under rare and extreme events. In the long term, “it includes the capacity to mobilize investment to develop supply and infrastructure as well as the insurance to ensure reliable supply”.³⁰

Gas security challenge in the EU has an external and an internal dimension.³¹

²⁸ Willenborg, R., C. Tönjes and W. Perlot, *Europe’s Oil Defences. An Analysis of Europe’s Oil Supply vulnerability and Its Emergency Oil Stockholding Systems*, The Clingendael Institute, The Hague, 2004

²⁹ Helm, D., *The Russian Dimension and Europe’s External Energy Policy*, University of Oxford, Oxford, 2007

³⁰ International Energy Agency, *Security of Gas Supply in Open Oil Markets*, OECD/IEA, Paris, 2004.

³¹ *Idem* 30

The first is linked to increasing import dependence from external suppliers. It includes three different risks: investment and facility risks, exporters' reliability risk and transit risks. The internal dimension of gas security of supply is linked to the development of the internal EU market and the liberalization of gas sector. The risks attached to this second dimension are concerned with under-investment in the internal gas market – both in the short- and in the long run.

2.1 Rising demand, declining production and increasing import dependence

An important factor in Europe's natural gas supply is the clear trend towards declining domestic gas production and resource discovery vis-à-vis increasing demand for gas. From 1990 to 2005, EU gas consumption rose by 50% and a further increase in demand is expected in the next twenty years or so (IEA, 2008)³². In the DG TREN reference scenario³³ published in 2006, for example, the EU natural gas demand was forecasted to grow by 24% (from 537 bcm to 666 bcm) between 2005 and 2030, while in 2008, DG TREN reduced the expected demand growth to 16%. These trends will mainly be driven by an increased use of natural gas in the power sector, but also by the rising use for space heating and in the industrial and commercial sectors.

Yet major uncertainties about future EU gas demand exist mainly because of inadequate knowledge about future gas prices and their impact on demand: power generation is very sensitive to gas price increases compared to those of its alternatives like coal, fuel oil and nuclear. Uncertainties about government policies also matter. How they will affect the development of new technologies (such as Carbon Capture and Storage), the increase of renewables share in electricity production and the development of European Emission Trading Scheme will strongly influence Europe's future natural gas demand³⁴.

Finally, demand for gas will also depend on the degree of commitment to fulfill environmental and climate change related targets such as those set by the Kyoto Protocol and the EU Emission Trading Scheme. To what extent these factors will affect EU gas demand is a matter of debate, but there is no doubt that natural gas consumption will continue to exceed Europe's indigenous production and that import dependence will increase.

³² International Energy Agency, The European Union, IEA Energy Policies Review, OECD/IEA, Paris, 2008

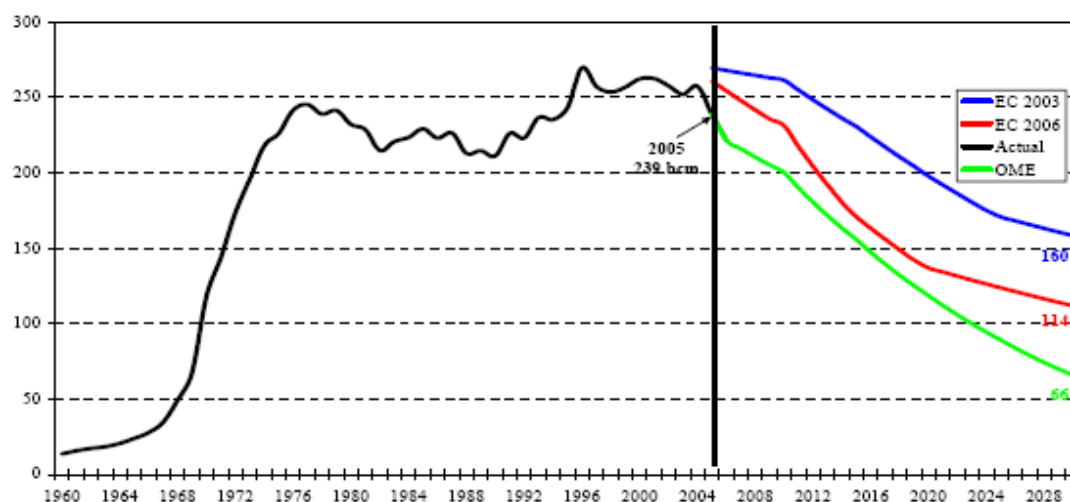
³³ European Commission – Directorate-General for Energy and Transport, "European Energy and Transport, Trends to 2030 – Update 2005", May 2006.

³⁴ Tönjes, C. and, J. de Jong, Perspectives on Security of Supply in European Natural Gas Markets, Working Paper, Clingendael, International Energy Programme, The Hague, 2007

EU domestic gas production reached its peak in 1996 entering a period of “pumping plateau” and long-term decline exacerbated by the progressive exhaustion of off-shore fields in the North Sea (see Figure 7). The UK potential has largely been explored and, although some fields have been put on-stream in the past ten years, a future decline in production seems irreversible.

Accordingly, the UK has ceased to be a net gas exporter and is now an importer of gas. The Department of Trade and Industry has projected that by 2020 the UK may import 80% of its natural gas needs. The Dutch government has announced a cap of 425 bcm over the period 2006-2015 on production from the Groningen field to compensate for declines in small fields production. Yet it seems that, after 2010, Groningen will no longer be able to make up for the decline of small fields. Apart from Norway, most countries in the rest of Europe will experience a gradual decline in gas reserves. Natural gas production in Norway has increased by 60% in the first half of this decade and is expected to continue to grow substantially up to 2010; thereafter it will probably reach a steady phase (IEA, 2006 and 2004). Overall, OME expects Europe’s production rate of decline to be rather slow until 2010 due to some new fields coming on stream, mainly in the UK. However, the EU’s natural gas production in 2030 will be less than 30% of today’s production. Even if demand remained at its 2005 level, the EU would need over 100 bcm of additional external gas supply just to compensate for the loss of production.

Fig. 7 – EU gas production outlooks to 2030 (in bcm)

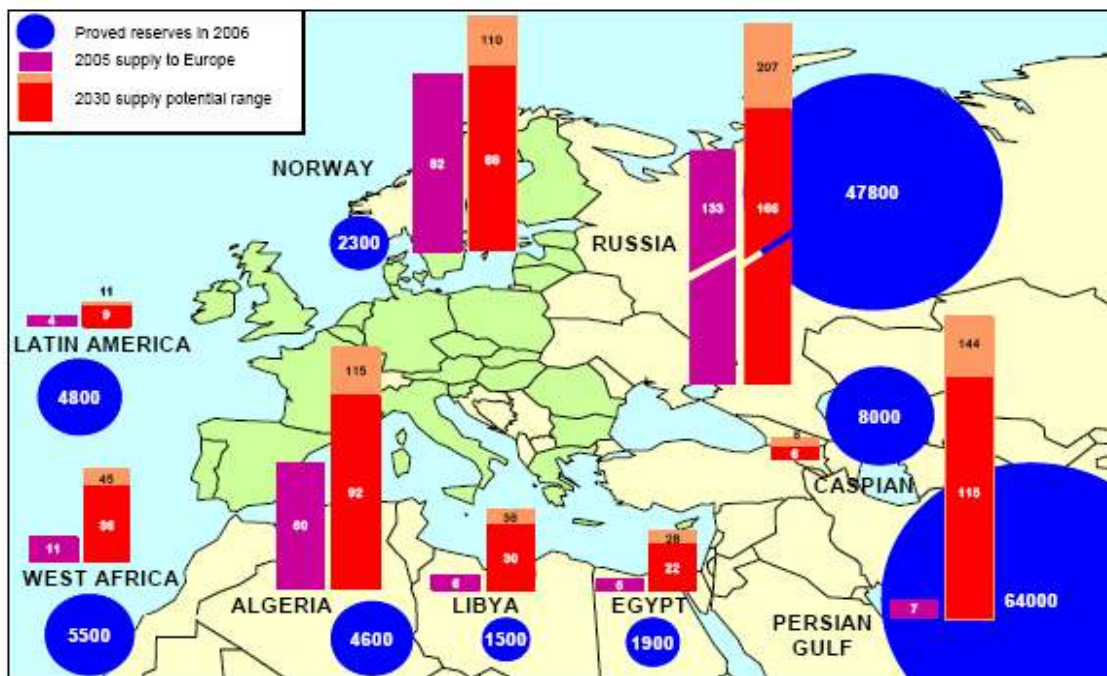


Sources: DG TREN (2003, 2006) and OME (2007)

Therefore, in the absence of new gas field discoveries in Europe, EU’s import dependence is expected to rise. Over the period from 1990 to 2006, natural gas imports to the EU-27 already doubled, exceeding 300 bcm. By 2030 imports are expected to increase to 625 bcm that is 65%

of EU demands (IEA, 2004). The bulk of OECD European imports are projected to come from its two main current suppliers – Russia (151 bcm) and Algeria (60 bcm) – but the number of suppliers will probably go up allowing for further diversification. According to the IEA, Russia – which owns 27% of world’s reserves – will remain the largest exporter for Europe and, in 2030; it will export around 200 bcm to OECD Europe; while Algeria’s export capacities will increase to 115 bcm/yr. Other African countries will also increase their exports to Europe (Libya, mostly by pipeline, Egypt and Nigeria by LNG) both by pipeline and LNG (see Figure 8). Yet the biggest increase is believed to be from the region with the largest reserves (36% of the world total),³⁵ the Middle East. Here exports will mostly develop in the form of LNG, while pipelines from Iran and possibly Iraq could also play an increasingly important role (IEA, 2004). Other regions that are seen by the EU as suppliers of potentially increasing importance are Central Asia and the Caspian region, but their resource share is less than 5% of the world’s total and could therefore provide only limited relief to Europe’s increasing gas needs. In sum, EU’s potential main suppliers have significant reserves that will enable them to increase production and meet Europe’s gas demand, at least until 2030.

Fig. 8 – Reserves and main suppliers’ export potential to the EU (in bcm)



Note: Uncertainty range for 2030 is +/- 20%

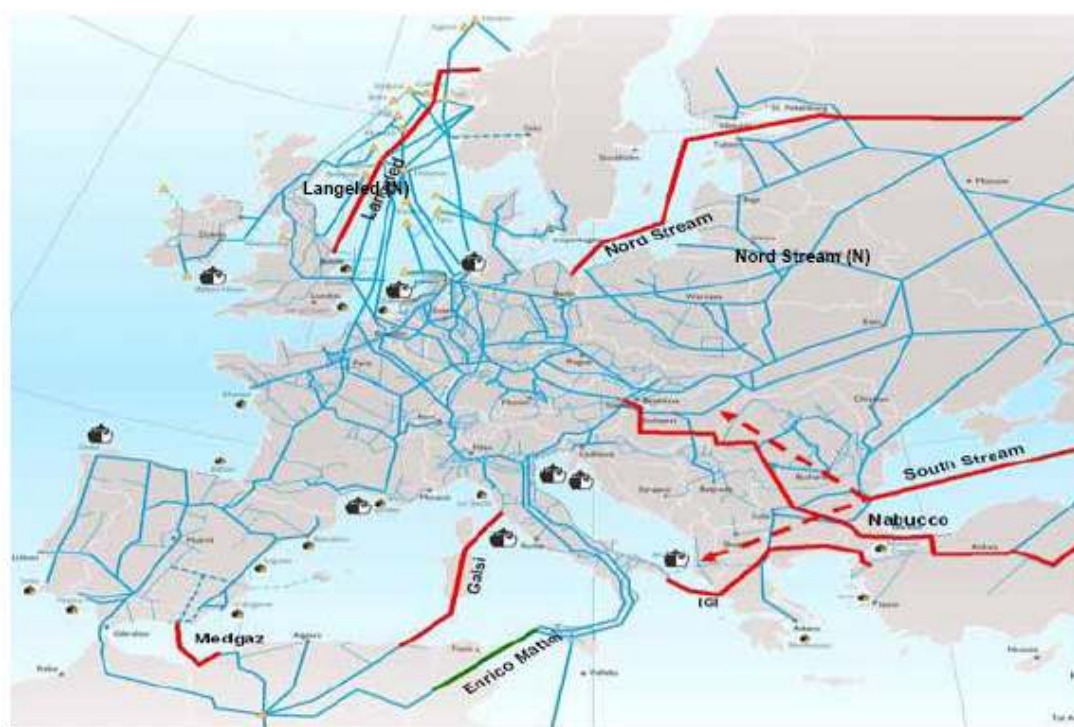
Sources: OME, Oil and Gas Journal, CEDIGAZ and Norwegian Petroleum Directorate

³⁵ Qatar and Iran account for the majority, each about 15%.

2.2 The external dimension of security of gas supplies

The economic and geopolitical risks attached to energy production and export activities in regions outside Europe are often perceived as a source of increasing vulnerability for the EU. As noted by Stern (2002)³⁶, there are three main risks associated with Europe's gas import dependence: investment and facility risks, exporters' reliability risks and transit risks. Those associated with facility dependence can be technical or financial in nature, while source dependence and transit dependence refer to political risks associated with government decisions of producing and transit countries.

Fig. 9 – Import pipelines to Europe, projects and reinforcements, 2008



Source: Eurogas and OME

Nabucco (N)

2.3. Exporters' reliability risks

In the EU, the main source of concern and debate associated with the projected increase of gas imports from Russia, the Middle East and Africa is related to the political reliability of these countries: nationalistic policies or possible internal instability are perceived as major energy security threats. Part of this European sensitivity is the result of a new assertiveness on

³⁶ Stern, J., 'The Future of Russian Gas and Gazprom', Oxford, 2002

the part of energy-producing countries, which stemmed from the post-2003 increase in hydrocarbon prices. Because of resource nationalism, international oil and gas companies and OECD governments have faced reduced access to resources and increased requests by host governments for substantial shares of rents from joint activities (Stern, 2006)³⁷. The main fear is that gas and oil producers, together with their national companies, will increasingly link their export policies to political considerations using Europe's dependence as a tool of political pressure. Should this be the case, natural gas would be the tool of choice for producers because, being pipeline-bound to a greater extent than oil, it allows deliveries to be suspended to target countries pushing them towards specific political behavior. In addition, European concern for exporters' reliability is justified by the unpredictability of interruption to supplies caused by internal political turmoil. The risk of terrorism, riots and political downturn in countries governed by undemocratic regimes is indeed an issue.

For European policy-makers the main source of concern is Russia. As the recent war in Georgia has shown, Russia does not seem to have abandoned its ambition of maintaining its influence on CIS countries nor its desire to regain a relevant position within the international system. Hydrocarbon resources seem to have become the preferred tools for pursuing these objectives, especially natural gas, which represents the biggest chunk of Russia's exports. Various episodes have contributed to rising doubts about Russia as a reliable supplier and commercial partner. The gas supply cuts (1993, 1994, 1995, 2005/2006, 2007 and 2009) to Ukraine illustrate this point. In particular, the December 2005 crisis was officially triggered by a price dispute (Stern, 2006),³⁸ but its coincidence with the political victory of the pro-Western candidate Viktor Yushenko has raised doubts about the purely commercial nature of Gazprom's price demand (Baran & Tuohy, 2006)³⁹. The January 2009 gas crisis between Russia and Ukraine, although apparently economically rather than politically driven, is adding to the negative perception of Russia's reliability as a gas supplier. Russia's pipeline politics is also a matter of concern, especially in the context of opposing gas pipeline projects bypassing its territory. It has indeed favored the South Stream gas pipeline and the extension of the Blue Stream at the expense of the Nabucco project. Moreover, Gazprom has jealously preserved its

³⁷ Stern, J., *The New Security Environment for European Gas. Worsening Geopolitics and Increasing Global Competition of LNG*, Oxford Institute for Energy Studies, NG15, Oxford, 2006

³⁸ In 2005, Ukraine was paying \$50 per 1000 m³ of gas while Gazprom wanted to increase the price up to \$230.

³⁹ Baran, Z. and E. Tuohy, *Energy Security Policy and the Security of Energy Supplies*, The Hudson Institute, Washington, D.C., 2006

monopoly over natural gas transiting from Central Asia, namely Turkmenistan and Uzbekistan, to Europe.

However, the interdependence between Russia and Europe should not be underestimated as a deterrent for Russia to use the energy weapon. The latter is in fact very much dependent on its gas exports to European countries, while the latter rely on Russia only for 6.5% of their total primary energy supply (Noël, 2008a)⁴⁰. For Russia, gas exports to Europe (52% for Western Europe and 20% for Eastern Europe) account for 3/4 of Gazprom's total export revenues (Heinrich, 2006; Stern, 2005). Accordingly, Russia has never voluntarily interrupted its supply to European customers but it has done so to CIS countries, which only accounts for 5% of Gazprom's export revenues. In addition, the degree of interdependence between Moscow and Europe varies from country to country. On average, Eastern Europe imports 60% of its total gas consumption from Russia (73% in Czech Republic, 66% in Hungary, 58% in Poland and 97% in the Slovak Republic). This amounts to 87% of all Eastern European gas imports. Western European countries, on the other hand, import only 18% of total consumption from Russia (amounting to 28% of all gas imports to Western Europe).⁴¹

The other important exporter, Algeria, has shown relative political stability during the mid-2000s, notwithstanding its internal upheavals and conflicts that are akin to a civil war (Stern, 2006). But the consequences of resource nationalism of the early 80s have not been forgotten. The extent of reliability of other emerging gas-producing states in North Africa – such as Libya and Egypt – may be difficult to predict. As for West Africa, it is worth mentioning Nigeria, the most important LNG producing country where petroleum-related unrest increased dramatically in 2006 (Stern, 2006). Finally, the Middle East's political instability raises questions about whether gas producers in the region will be able to turn into reliable exporters to meet Europe's future gas needs. Iran's regular confrontations with the West on various issues – especially nuclear issues – does not send out positive signals. Notwithstanding new investments in Iraq, the very unstable political situation of the country and the continuous risk of Islamic-extremist terrorism make it a highly unsecured supplier. Qatar is also supposed to become a major LNG exporter but internal political strains should not be underestimated when it comes to gas exports (Stern, 2006).

It has also been mentioned, Europe is facing the possible formation of a gas exporters' cartel in control of supplies and prices. Since the Gas Exporting Countries Forum (GECF) was

⁴⁰ Noël, P., *Beyond Dependence: How to Deal with Russian Gas*, Policy Brief No. 9, European Council on Foreign Relations, November, 2008-a.

⁴¹ Stern, J., *The Future of Russian Gas and Gazprom*, Oxford: Oxford University Press., 2005

launched in 2001, major producers such as Algeria, Qatar, and Russia have on various occasions signaled their support for it. In part, this was a reaction to Europe's decision to liberalize energy markets, thereby increasing competition and putting long-term contracts at stake. But the GECF is also related to Russia's ambition to increase its bargaining power towards European customers.⁴²

During the last GECF summit (23 December 2008), the member states agreed on a charter to give a more formal structure to the organization. However, the institutional basis for a European gas cartel is at present relatively weak (Finon, 2007)⁴³. First, gas trade is mainly based on long term contracts making cartelization of gas markets very difficult, if not impossible. Only a further increase of on-the-spot contracts, possibly related to LNG trade, could favor cartelization. Second, to be effective, a gas cartel should include the other two major gas exporters to Europe – the Netherlands and Norway – but it is difficult to imagine that these two European countries would comply with a cartel. Third, unlike oil, natural gas has a number of substitutes (coal, renewable and oil) that also influence gas prices, making producers' control over prices limited. Finally, the nature of natural gas should not be underestimated as a limit: holding significant spare capacity will be much more costly and complicated for natural gas than it is for oil, as the necessary transport infrastructure in the form of pipelines of LNG are very capital-intensive (Tönjes & de Jong, 2007; Stern, 2002; McCracker, 2007)⁴⁴

⁴² Although it formally denies pursuing a cartelization plan, Russia continues to search for forms of cooperation with other producing countries: the 2007 agreement between Sonatrach and Gazprom and the 'big troika' formed in early November 2008 together with Iran and Qatar are good examples.

⁴³ Finon, D., *Russia and the "Gas-OPEC". Real or Perceived Threat?*, Ifri Russia/NIS Centre, Russie.Nei.Visions No. 24, November, Paris, 2007

⁴⁴ Tönjes, C. and, J. de Jong, Perspectives on Security of Supply in European Natural Gas Markets, Working Paper, Clingendael, International Energy Programme, The Hague, 2007

Fig. 10 – LNG gasification terminals in Europe: existing plants and projects



Source: OME

2.3 Internal security of supply

While Europe’s increasing import dependence from non-OECD regions raises external concerns about the security of supply, the completion of the internal market and the liberalization process add some internal concerns. The implementation of Directive 98/30/EC gave the first input for the reorganization of the gas sector and, in particular, towards the opening of several activities to the competition rules in Continental Europe.

The liberalization process has been accelerated with the implementation of the second Directive 2003/55/EC,⁴⁵ Regulation 1775/2005/EC⁴⁶ and Directive 2004/67/EC. In the context of the Third Liberalization Package (European Commission, 2007c), in 2007, the Commission drafted a new directive proposal to improve access of competitors to the transmission network and ensure the effective separation between the operation of gas transmission network from supply and generation activities. As a first option, the so-called full ownership unbundling, the Commission proposed to break up big companies by forcing them

⁴⁵ The latter is divided in two sections, one on third-part access for transportation (Article 18) and one on new infrastructure (Article 22). In addition, the directive mandates access to storage and ancillary services (Article 19) leaving the choice between negotiated or regulated access to member states.

⁴⁶ It sets non-discriminatory rules for access conditions to natural gas transmission system taking into account the specificities of national and regional markets with a view to assuring the proper functioning of the internal market.

to sell their transmission networks. As an alternative, the Commission proposed a system of independent system operators (ISOs), which would allow vertically integrated firms to keep their transmission infrastructure, but to hand over management of pipeline and storage assets to ISOs.⁴⁷ This last option was accompanied by a supporting regulatory framework: the Third Liberalization Package called for more power and independence for national regulators, for the creation of an EU regulator together with an agency for the cooperation of energy regulators and system operators as well as for increased market transparency. Due to political pressure by Germany and France, a ‘third way’ option—the so-called regulating unbundling – was then put forward in June 2008: companies would retain full network ownership and control, while operations would be managed by an independent transmission operator (ITO) that would ensure fair network access and push for investments (Riley, 2008)⁴⁸. This proposal was then approved by a majority of MEPs as a possible alternative to full ownership unbundling; the ISO option was rejected.

The idea behind the creation of the EU single market for natural gas is that it should bring economic efficiency due to higher competition and, allowing customers to choose their supplier, should push operators to reduce costs and propose improved quality of services. However, moving from centralized to de-centralized decision-making and from volume-signals to price signals, unless the market is ‘perfect’, could in reality lead to less efficiency in the allocation of gas in the system. In this case competition may reduce the quality of the system management. The opening of the gas sector indeed raises the question of whether the market itself will be able to guarantee the security of supply. The main concern regards the ability of the market to deliver timely signals and competitive incentives for investment to guarantee secure and reliable gas supply all the way to the final consumer. As we explain below, this applies both to the short and the long-term security of supply.

2.4. Short-term security: coping with low-probability events

An important challenge for the security of gas supply is to meet the demand not only under regular circumstances, but also when a supply disruption or an unexpected event – such as extreme weather conditions or a technical accident – occurs. A failure to deliver gas on a

⁴⁷ To avoid a sell out of strategic assets to third countries, the Commission included a clause which would force foreign companies to comply with the same unbundling regulations at home before buying EU assets. This clause is commonly referred to as the “Gazprom clause”, as it intends to limit acquisitions by Gazprom and thus a unilateral increase of the Russian sphere of influence into the European market.

⁴⁸ Riley, A., “Ownership Unbundling. A Logic Outage for the Anti-Energy Liberalisers?”, CEPS Commentary, CEPS, Brussels, April, 2008

cold winter day would indeed have serious consequences for most of the households and, to a lesser extent, for industry – unless they have the possibility to switch to other sources. To ensure a high degree of supply reliability to the customers during low-probability events, there are a number of traditional insurance instruments. The most important are the diversification of supply sources and routes, the interconnection of national grids, long-term contracts, flexibility instruments (supply flexibility, interruptible contract, etc) and storage facilities (IEA, 2004)⁴⁹. In the past, the gas industry has had a very good record in covering low-probability/high-impact events because companies used to provide these instruments, passing their costs on to customers. Yet there is a risk that the liberalization of the European gas market will undermine some of these instruments, thereby contributing to the insecurity of supply.

First of all, in open markets, the possibility to get extra-supply by buying gas in spot markets is increased, while counting on long-term contracts decreases. So far, the latter have played a very important role in Europe, as everywhere else: committing sellers and buyers to trade gas for a long period under specific conditions, long-term contracts allow the risks associated with large gas projects to be divided between producers and importers. In particular, they put the price risk on the seller, and the risk related to marketing the gas on the buyer. More important, they have been regarded up to now as necessary requirements for financing and investment in new long-distance transport infrastructure. In light of this, it can be said that security of supply would seriously be threatened if long-term contracts were to disappear.⁵⁰ Yet, liberalization emphasizes short-term trading without necessarily eliminating long-term deals. Certainly, liberalization implies shortening contracts from 15-25 to 8-15 years and the shift of take-or-pay obligations from 80-90% to 50-60% and a flexible level of price indexation level (Stern, 2002). But long-term and spot contracts will probably co-exist in the new European gas market because the two are complementary: the first allow the financing of large new gas supply sources, but the second allow short and medium-term balancing of supply and demand and therefore offer more efficient use of existing infrastructure and better flexibility and security (IEA, 2004)⁵¹. The recent signing of long-term contracts between some European countries (e.g. Italy) and Russia confirms this observation.

⁴⁹ Idem 30

⁵⁰ Indeed, in the second directive and in the Directive on security of gas supply, the European Commission has recognized the importance of long-term contracts for security of supply and the financing of major new gas supply projects.

⁵¹ For a further discussion on the survival of long-term contacts in liberalized energy markets see Coop (2006).

In order to cope with short-term security of supplies, gas storage and availability of spare capacity are also important. At the moment, Europe is relatively well-endowed with gas storage facilities. At the end of 2004, OECD Europe had 103 underground gas storage facilities with a working volume of 64.7 bcm, or the equivalent of 48 days of average consumption. Three countries dominate the European storage scene: Germany (30% of capacity), Italy (20% of capacity) and France (17% of capacity). Storage at LNG import terminals also plays a role in Europe, particularly in Belgium and Spain. Overall, there are 14 LNG import regasification terminals in Europe with a capacity of 75 bcm per year and a storage capacity of 1.4 bcm (2% of European storage capacity) (IEA, 2006). By 2030, WEIO 2003 projects a further investment of around \$23 billion for enlargements of existing facilities and the construction of new underground storage. However, as low-probability/high-impact events occur very rarely, the incentive of market players to invest in insurance is projected to be low in the future because of scarce incentives within a liberalized environment.

2.5. Long-term security: dealing with timing signals for investment in transmission and distribution

In general terms, the long-term reliability of supply depends on timing and sufficient investment in production and transportation facilities. For the specific case of internal security of supply, the concern is especially over investment in transmission and distribution facilities.

With gas market reforms and the unbundling of transportation and supply functions, incentives for investment decisions on infrastructure may decrease. In the past, in most countries, governments delegated responsibility for security of supply to one single actor, namely a monopoly state-owned company that was responsible for reliability of gas supply across the whole gas market. In open markets, the responsibility for transmission security is shared: the unbundling of gas companies implies unbundling the responsibility along the whole gas chain –from the production site to the burner tip (IEA, 2004; Eurogas, 2006)⁵². Under these conditions, the risk is that new competitors will be tempted to ‘free-ride’ on the security provided by the incumbent suppliers and the ‘heat of competition’ may push operators to play down security and priorities cost-cutting (Luciani, 2004)⁵³.

The propensity to invest seems to decline in liberalized markets, especially because of increased risks for operators. Competition has introduced a new risk of market share loss for

⁵² Idem 30

⁵³ Luciani, G., Security of Supply for Natural Gas Markets. What Is It and What Is It Not?, INDES Working Papers No. 2, CEPS, Brussels, 2004

retailers as well as uncertainty over regulation development. Unbundling threatens the past stable relations between complementary operators reducing the possibility of cooperation. More specifically, the changes in the rules of the game due to liberalization have had two consequences on companies' strategies. The first is horizontal integration: incumbents are merging in order to restore part of their past market power and, hence, protect themselves against new downstream market risks. These mergers are also a way of improving the bargaining power of importers in their negotiations with exporters. The second is vertical integration: importers try to accede to production and exporters try to develop on downstream markets. Germany is a good case in point for both cases: EON and Ruhgas have merged (horizontal integration), while EON and RWE has progressively acquired small municipalities (vertical integration) (Jacobsen, Fristrup & Munksgaard, 2005)⁵⁴. This is a way of reducing the uncertainty introduced by the unbundling of the gas chain.

Looking at past years, it seems that competition development has not led to a significant increase in infrastructure investment. For the time being, the European gas grid seems sufficient to cover Europe's transmission needs. However, almost all gas connections between European countries are fully used and many peripheral parts of the national networks are entirely dependent on a single feeder-line, which makes them vulnerable to disruption. The projected increase in gas imports will add further capacity risks to the European grid requiring, among other things, a substantial enlargement of the network and therefore massive investment.

Accordingly, the WEIO 2003 projects that, by 2030, the gas sector would need \$110 billion for transmission and \$108 billion for distribution (IEA, 2004)⁵⁵. Given the scarce incentives to invest, reaching these targets may be difficult, unless gas operators will get higher rates of return and more flexibility in project development. The central point is indeed whether investment into networks is attractive for them: operators need a predictable, reliable and transparent framework in order to commit for a given project. The role of regulators – both at national and at EU level – then becomes crucial to the extent that they are responsible for providing attractive incentives.

⁵⁴ Jacobsen, H., P. Fristrup and J. Munksgaard, *Integrated Energy Markets and Varying Degree of Liberalization. Price Links, Bundled Sales and CHP Production Exemplified by Northern European Experiences*, Risø National Laboratory, Danish Institute of Local Government Studies, Copenhagen, 2005

⁵⁵ *Idem* 30

The concept of security of supply has different interpretations and approaches, making its definition elusive. The literature is divided between those who interpret energy security from an economic point of view and those who stress its political and strategic side. However, the economic and so-called political interpretation are two sides of the same coin and both are necessary to explain the challenges as well as the solutions to dealing with security of energy supply in the EU. Similarly, those who see energy security as a distinct issue from environmental considerations do not appreciate the strong link between these two domains.

Given the relevance of all these approaches in determining the actual picture of Europe's security of supply, this paper has taken into account both the political-economic link and the energy and climate change nexus. Five major factors have been identified as risks to EU security of energy supply: geological, technical, economic, geopolitical and environmental risks.

The widening gap between Europe's demand for oil and its domestic production is a source of concern since it implies increasing import dependence on the Middle East, Russia, the Caspian region and Africa. Far from being a concern per se, increasing oil import dependence makes Europe vulnerable to three main risks: oil transport risks, increasing competition for global resources and the impact of oil price volatility. Considering the existing systems of emergency response and the planned infrastructure to facilitate sea-lane transport, the first risk represents only a minor challenge for the EU. The increasing competition for global oil resources, which is caused by the imbalance between world oil demand and supply as well as increasing extraction difficulties, could become irrelevant if Europe is able to engage in an aggressive climate change policy. As the recent change in oil price levels has shown, oil price volatility can worsen the world economic situation but its impact is perceived only in the short-term. Notwithstanding these risks, oil is expected to remain of critical importance for Europe, especially for the transport sector.

Given the fact that natural gas and oil share some economic characteristics but are different in nature, the concept of security of supply for natural gas is significantly at odds with the one used for oil. The security of gas supplies in the EU has a set of external risks related to increasing import dependence from external suppliers, including investment and facility risks, exporters' reliability risk and transit risks. These challenges require further diplomatic efforts, both at the EU and national levels. The EU then has to face a major inward challenge, which is mainly related to the development of the internal market for gas and the related liberalization process: the problem of under-investment in natural gas infrastructures. Contrary to what is

generally believed, there is a risk that the propensity to commit to new projects will decline rather than increase if the liberalization process is not completed efficiently. To avoid this, energy operators need a predictable, reliable and transparent regulatory framework; something only the EU can provide.

Chapter III

3. The E.U. – Russia dialogue

Energy plays an important role in the EU-Russia economic relationship and promotion of deeper integration between Russian and European markets. Commercial relations between Russia and Europe had been developing quite well. Energy supplies from Russia to European nations had reached high records during these years.

Russia is the Europe biggest neighbor. The EU is Russia's most important trading partner and source of foreign investment. Yet EU-Russia relations have often suffered from discord over different contentious issues such as trade quotas or rules on visas. So it is more important for both sides to identify areas of common interest. Energy is such an area.

The EU-Russia energy dialogue was launched in 2000 (in the context of the EU's Green Paper on Energy Security) on the initiative of Presidents Chirac and Putin and the then-Commissioner Prodi, in the recognition that Russia and the EU are natural partners in the energy sector and given their mutual interests in enhancing the overall energy security of the continent. The objective was to provide a forum for the discussion of all questions of common interest in the energy sector and bind Russia and the EU into a closer relationship.

The dialogue involves regular meetings of experts, as well as high-level political discussions during the annual EU-Russia summits.

Subsequent summits have declared a number of infrastructure projects to be of "common interest", including several projected gas and oil pipelines, and the interconnection of the two electricity networks.

The basic idea behind the dialogue is a simple balancing of interests: the Russians need more European investment to develop their energy resources, while the Europeans need secure long-term access to Russian oil and gas.⁵⁶

However, progress since 2000 has been mixed. There have been some notable successes, for example the establishment of a technology centre in Moscow in November 2002 and the start of several pilot projects for energy savings. But on many of the more important

⁵⁶ Noël, P., Beyond Dependence: How to Deal with Russian Gas, Policy Brief No. 9, European Council on Foreign Relations, November, 2008-a

issues – pipelines, gas supply contracts, electricity sector restructuring and nuclear fuel supplies – the two sides continue to disagree.

There are several reasons why progress has been slow. First, energy is hugely important for the Russian economy. Even a government as reform-minded as that of the former President Vladimir Putin will tread carefully when it comes to energy market reform.

Second, the EU-Russia energy dialogue involves a host of participants that do not always see eye-to-eye. The Russian government and the EU may agree on the importance of bilateral co-operation. But the key players in this field are private or state-controlled companies that often have their own agenda.

Third, the energy dialogue is not only, or even primarily, about country-to-country sales of oil and gas. It has many implications for national economic policies, in particular energy market liberalization. Last but not least, the question of energy sector reform has become intertwined with other EU-Russian negotiations, in particular the ongoing talks on Russia's accession to the World Trade Organization (WTO) and the fate of the Kyoto Protocol on climate change⁵⁷.

The EU uses both the WTO negotiations and the energy dialogue to push Russia to open up and deregulate its energy markets. At present, the gas market, including export pipelines, is entirely dominated by the state controlled gas giant, Gazprom, while the electricity market is in the hands of the UES power company. The Russian government is, in principle, committed to reforming both 'natural monopolies' by separating the production side from the transmission and distribution of energy.

The EU is interested in Russian energy market reforms for several reasons. The first reason why the EU is pushing Russia on energy market reform is that there is a growing mismatch between the EU's own efforts to liberalize its energy markets and the supply of Russian gas through a monopolist, namely Gazprom.

A second reason is that the EU fears that as long as Gazprom remains in sole charge of Russia's gas, Russian supplies may not keep up with rapidly growing EU demand. Gazprom's output has been more or less flat for the last decade, as the company has failed to invest sufficiently in the development of new gas fields.

⁵⁷ European Commission, Towards a European Strategy for the Security of Energy Supply, Green Paper, COM (2000) 769 final, Brussels, 2000.

Meanwhile, Russia's privately-owned oil majors sit on huge gas fields that they do not exploit commercially because Gazprom does not allow them access to lucrative export markets.

The dialogue on oil is less politically charged, partly because Russia has already privatized and liberalized its oil industry. In the oil sector, the EU-Russia energy dialogue has focused mainly on improving the conditions for European investment in the Russian oil sector. The EU has long pushed Russia to establish a workable framework for production sharing agreements (PSAs), which are commonly used in emerging market economies to secure the legal and tax environment for large-scale investments in natural resources.

To lure more European money into the Russian oil sector, the EU is also working on a scheme that would insure EU companies against losses stemming from the weakness of Russia's legal system. In the past, EU companies have lost significant sums because their Russian partners have used local courts and prosecutors to gain control of the Europeans' investments.

The obstacles for a well-functioning energy partnership remain formidable. But self-interest on both sides is likely to sustain the dialogue in the coming years. The energy relationship is simply too important for either side to drop the dialogue. In the long run, if the dialogue makes progress and proves its value to all parties, it could become formalized in an EU-Russia energy treaty. Some Russian and Commission officials have floated the idea of a treaty that would cover rules on investment, security of supply, competition, technical co-operation and free circulation of energy.

Revenues from oil exports, particularly to Western Europe as the primary consumer, are simply too important to the Russian economy. Russia is not only currently dependent on its West European market; it is also dependent on Eastern and Central European transit routes. The main pipelines flow west to Europe, and the infrastructure for oil export to the east is still underdeveloped. Russia is currently tied to European consumers, and considers itself vulnerable both to economic and political blackmail since it has to export the majority of its produce through other states. Thus, if the EU is "dependent" on Russian oil (and dependence is a generous term), it is clearly a mutual dependence, one where Russia is currently more dependent on the EU. It is therefore highly unlikely to cut off its oil exports to the EU in an effort to exert diplomatic leverage⁵⁸.

⁵⁸ Stern, J., 'The Future of Russian Gas and Gazprom', Oxford, 2002

Indeed, from the Russian perspective, it seems that they are vulnerable to energy leverage and the dangers of dependency on the EU. According to one analyst, there are fears that the EU will seek to exert pressure on Moscow and seek other sources before Russia can develop other markets. These fears result in the stoking of fears of retaliation if alternative deals are pursued by the EU. Here lies a potential problem. Until recently, experts noted that the energy relationship had hardly spilled over in ways one might expect into the political dialogue in terms of influencing EU positions. However, if both sides become nervous about their energy security, diversification away from each other is the answer. This creates an “energy security dilemma”.

In view of the interdependence of Russia and the EU in the field of energy, an energy dialog is becoming one of the major areas of sectoral cooperation. This derives from the real economic needs of our countries, from our common interest in the consolidation of political and economic stability in the Eurasian space.

The European Union nations currently account for about 90 percent of Russia’s export of energy carriers. By all appearances, this market will remain a priority one for us in the next 20-25 years, too. And in the long run the energy dialog could develop into the creation of a European Energy Community, based on the principles of equality and encompassing all the kinds of energy.

It seems that now is the time for both Russian and European politicians to carefully review certain past mistakes, learn from them, and, in some sense, ‘turn the page’ in mutual energy relationships and take new steps in order to build a better common energy future.

Strategic solution for Russia and Europe in their energy relations lies in the direction of deeper market integration, mutual direct investments, establishment of common market structures and rules. Such an approach will make all parties interested in stability, reliability and efficiency of markets and energy security of supply.⁵⁹

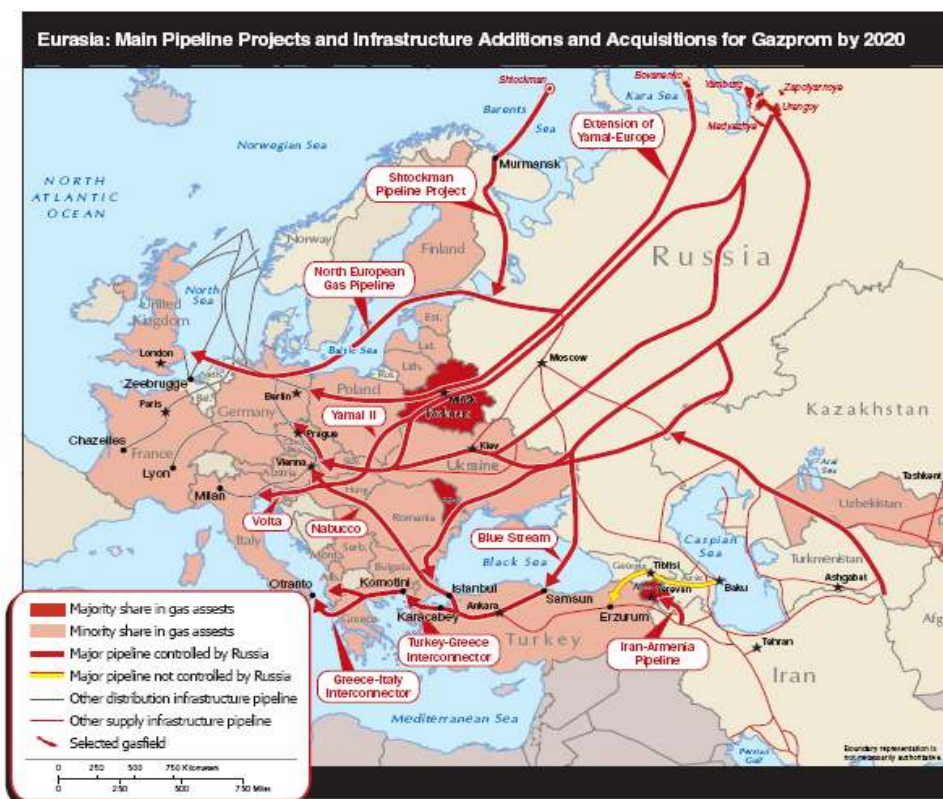
In my view it would be better to build energy security on a balance of the security of demand and offer. The security of the offer entails guarantees of stable demand for the supplier's energy and opens the door to large-scale investment in long-term projects.

⁵⁹ Guzzini, Stefano, *Realism in International Relations and International Political Economy. The continuing story of a death foretold*, Routledge, London and New York, 1998.

Also I wish to stress that sustainable energy security system can be built only on equality and respect for the interests of all parties, and on asset swaps at all stages of energy production and supply.

Russian energy supplies to Europe will be ensured most reliably if Russian and European companies jointly control and get profits along the entire gas route from the well in West Siberia to the gas stove in Scotland. If we do follow these principles, that would only lead Russia and Europe to better energy security and mutual economic development benefits. We need a mutually respectful dialogue addressing concerns and specific interests of both parties, Russia and the EU.

Fig. 11 – Gazprom main pipeline projects and infrastructure



The future of EU–Russia relations will depend a great deal on what EU countries with a long history of democracy want from a Russia still involved in the painful process of transition from communism that began only fifteen years ago.

Lack of trust in Russia, which can partly be put down to the legacy of the past and partly to Russia's present development, induces the EU to distance itself from its eastern

neighbor and to perceive it chiefly in terms of „oil, gas and nuclear weapons”.⁶⁰ If this approach prevails in the EU, it will have dramatic consequences for Russia’s internal evolution and could lead to a scenario in which EU–Russia relations are trapped between cooperation and confrontation. Indeed, in the absence of clear strategic goals in the relationship between Russia and the EU, there remains the danger of Russia being stuck with the role of supplier of raw materials and a temptation to use economic levers for political purposes, thus creating the possibility of new conflicts between Russia and individual EU countries. If the EU needs Russia as a stable and reliable partner, there needs to be a totally different scenario, more beneficial to European and international security not to mention to the European Union and Russia themselves.

⁶⁰ Stern, J., Security of European Natural Gas Supplies. The Impact of Import Dependence and Liberalization, the Royal institute of International Affairs, London.

3.1. The Energy Reform in Russia and its Implications for the European Energy Security

The purpose of this chapter is to argue about the Russian energy policy and its implication concerning the European gas supplies.

Gazprom's long-term production capacity has been a source of concern both domestically and internationally. It has resisted major development projects out of concern for their high marginal costs and uncertainty over future domestic and international prices. Now the Russian natural gas and power industries are undergoing reform that has potentially far-reaching consequences for European gas supply and energy security. Given the scale of domestic sales and losses, the future profitability of the domestic market will be the determining factor in Gazprom's decisions for investment in future production. Subsidized domestic prices will not allow Gazprom to cover the high marginal costs involved in developing the new major fields that will guarantee domestic and export supplies. Therefore the program of domestic gas price deregulation, long advocated by Gazprom and newly accepted by the Russian government, will help guarantee EU energy security by encouraging new development through protection against guaranteed losses on the domestic market and also by driving down domestic demand through greater conservation, industrial efficiency, and fuel substitutions, which will increase the supplies available for export.

The Russian natural gas and power industries are currently undergoing a reform that has potentially far-reaching consequences for Europe's gas supply and energy security. After fifteen years of subsidizing domestic industry through the regulation of natural gas and electricity prices, the Russian government has embarked on an ambitious program of price deregulation that will result in free market pricing for domestic industrial consumers by 2011.⁶¹

This program has involved many politically difficult decisions about the best use of Russia's comparative advantage in indigenous energy resources and the state's responsibility for the support of the national economy through the subsidy of domestic industry. It has also

⁶¹ Stern, J., *The New Security Environment for European Gas. Worsening Geopolitics and Increasing Global Competition of LNG*, Oxford Institute for Energy Studies, NG15, Oxford, 2006

highlighted a complex identity within Gazprom and revealed that its relationship with the Kremlin is not as harmonious as one might expect.

Conceived as a national champion company by the Russian government, which holds a majority of its stock, Gazprom has been expected not only to provide cheap supplies of natural gas to support the development of Russian industry but to secure Russian government interests in international business. However, despite their close relationship to Prime Minister Putin, Gazprom's CEO, Aleksei Miller, and President, Dmitry Medvedev, have been showing greater concern for Gazprom's profitability and survival and have been giving greater consideration to how macroeconomic factors influence the profitability of industry and the sustainability of economic development. Arguing that cheap electricity, and the need for an abundance of cheap natural gas to supply cheap electricity, was actually a hindrance to healthy domestic development, Gazprom has successfully persuaded the government to abandon price regulation in favor of a free energy market. Although domestic price reform was a key recommendation of the World Trade Organization for Russia's admittance, the final program won by Gazprom is far more ambitious. Furthermore, Russia's entry still faces many hurdles and is far from imminent. It may even be delayed until after 2008 and may be de-prioritized by Putin's successor. Therefore, Russia has demonstrated a great sense of responsibility in addressing its energy-wasteful practices immediately, and has demonstrated responsible recognition of its best long-term interests.

Despite pressure from the Russian government and expression of deep concern from European customers, Gazprom has resisted these major development projects because of their high marginal costs and uncertainty over future domestic and international prices.

The domestic market has traditionally been a financial liability for Gazprom. Despite absorbing approximately 60 percent of Gazprom's output, the company has never realized a profit from sales within Russia. Instead, Gazprom relies on exports to European markets for its entire profit margin. Recently, Gazprom has lost more than \$1 billion per year. While this has been somewhat sustainable over the past twenty years, as no new significant development has been necessary, the growing shortfall and the high marginal costs necessary to guarantee future supply to both domestic and foreign markets have caused Gazprom to rebel against its continued subsidization of the domestic market. Fearing that the attempt to finance expensive new development with subsidized domestic rates will lead to bankruptcy, Gazprom is resisting its role as national patron of domestic industry and guarantor of cheap fuel.

Gazprom's concern for its financial health implies good things for European energy security. The EU energy supply is in greater danger from a cash-strapped Gazprom that is subservient to the energy needs of the larger Russian domestic market than from a Gazprom that is financially solvent and confident of its future revenues through sound pricing policies. Given the scale of domestic sales and losses, the future profitability of the domestic market will be the determining factor in Gazprom's decisions for investment in future production. Subsidized domestic prices will not allow Gazprom to cover the high marginal costs involved in developing the new major fields that will guarantee domestic and export supplies.

Therefore the program of domestic gas price deregulation, long advocated by Gazprom and recently accepted by the Russian government, will help guarantee EU energy security by encouraging new development through protection against guaranteed losses on the domestic market and also by driving down domestic demand through greater conservation, industrial efficiency, and fuel substitutions—all of which will increase the supplies available for export.

Under President Vladimir Putin, the Russian government has moved to reassert central control over Russia's energy resources. Oil and natural gas are particular targets. The Kremlin administration has taken aggressive measures to renationalize previously privatized extraction and production industries and their associated distribution systems, as well as claim the right of ownership of the country's deposits of mineral resources. The Putin administration argues that these energy resources are essential to the national security of Russia and must constitute the basis of Russia's economic and social recovery following both the collapse of communism and the resulting turmoil of the experiment with industrial privatization under his predecessor President Boris Yeltsin. Therefore, Putin supports the creation of "national champion" industries, which will guarantee that Russia's most potentially profitable resources and lucrative industries will benefit the general welfare of society as a whole rather than the interests of private individuals, as was grossly evident during the Yeltsin years.

Putin's vision of a national champion implies a close synchronicity and symbiosis between the national champion and the Kremlin. However, this vision fails to recognize the potential conflict between the state's needs and a commercial enterprise's needs. It also fails to recognize that individuals with various motivations formulate the policies of the state and business, and that conflict between individuals can often eclipse the national mission. Unfortunately for Gazprom, the role of national champion is not always compatible with the role of a normal commercial organization.⁶²

⁶² Stevens, P., *The Coming Oil Supply Crunch*, Chatham House, London, 2008

The appetite for cheap gas supplies in Russia-and the requirement by law to satisfy that appetite-has long been the primary handicap to Gazprom's development as a healthy, profit-making company. In 2005, Gazprom accounted for 85 percent of Russia's natural gas production and 75 percent of all domestic sales. However as a quasigovernmental agency, where the Kremlin and Kremlin-associated agencies are the main shareholders, Gazprom is required to sell to the domestic market at government-regulated prices with extremely limited discretion to withhold deliveries for nonpayment. The nonpayment crisis of the 1990s has significantly abated, and although Gazprom has even managed to collect on a large portion of past debt, sales to the domestic market continue to result in a loss. Gazprom's nontransparent operations make it difficult to identify exactly the size of these losses. According to Gazprom, the company lost approximately \$25 billion in the domestic market from 1999-2003, which is probably not overly exaggerated. High export profits have sustained Gazprom, but as domestic demand has outpaced all recent projections, it has been understandably reluctant to commit to expensive new field development given the threat to its profits.

The Kremlin's use of Gazprom as national champion has both international and domestic dimensions. Gazprom serves the government's domestic agenda by aiding industry and has also been a useful tool in helping the Kremlin asserts its international agenda, especially in CIS countries, which are almost entirely dependent on Russia for their natural gas supplies. Gazprom's business practices are perceived to be influenced by the Kremlin's political goals. The case of Ukraine, which receives around 60 percent of its gas from Russia or through Russian-owned pipelines, is particularly instructive. In August 2004 Gazprom promised Ukraine a low gas price of \$50 per 1000 m³. This was perceived as a diktat by the Kremlin to boost the chances of the pro-Moscow Viktor Yanukovych over the Western-leaning Viktor Yushchenko in the December 2004 presidential election. After Yushchenko was swept to power in the Orange Revolution-which the Kremlin suspected was instigated by Western interests-Ukraine began to pursue closer ties with the West and even began investigating the possibility of joining NATO. Gazprom subsequently raised the price of gas to \$230 in December 2005 in the midst of winter and threatened to cut Ukraine off completely if it did not agree to the price. The price was eventually negotiated down to \$95 through an agreement that included gas supplements from Turkmenistan, Uzbekistan, and Kazakhstan and an agreement for a five-year guarantee of lower Russian transit fees for its gas deliveries to Europe through Ukraine's pipelines. However, the price for 2007 has been raised to \$130. During negotiations, Russia and Gazprom threatened to raise the price even higher, and in return for the \$130

agreement, Ukraine must offer Russia a stake in its domestic energy and aviation industries. (Ukraine has so far resisted Gazprom's attempts to gain control of its gas transit pipelines.) Furthermore, Ukraine must not attempt to intrude on Russia's monopoly on the purchase of Turkmen gas. The deal reportedly also includes a promise by Ukraine to forget about joining NATO and to extend the lease on the Russian naval base in the Crimea until at least 2017.

Georgia, which receives 75 percent of its gas supplies from Russia, presents a similar case. Relations between Georgia and the Kremlin have deteriorated since Georgia's Rose Revolution in 2003, which the Kremlin also suspects was spurred by Western interests. The new government of President Mikheil Saakashvili embarked on a pro-Western orientation including an interest in NATO membership. The price of gas from Russia was subsequently raised from \$60 to \$110 per 1000 m³. In 2006, relations between Russia and Georgia deteriorated further over the status of the Georgian breakaway republics of Abkhazia and South Ossetia. In September 2006, Georgia detained and expelled four Russian military officers on charges of spying, prompting Russia to sever all air, sea, and postal links and to crackdown on Georgian businesses and migrants within Russia. On November 2, 2006, Gazprom announced that price of gas to Georgia would rise to \$230.

Belarus and Armenia provide further examples of how Gazprom may have manipulated gas prices for the Kremlin's political goals. Both countries are politically friendly with Russia. However, Gazprom desires their gas pipelines as strategic assets to deliver gas to Europe without transit fees. Furthermore, Belarus had been in a quarrel with Russia regarding stalled plans to integrate Belarus politically and economically with Russia, and also over Russia's plan to end duty-free oil shipments to Belarus. In December 2006, Belarus was threatened with a fourfold increase in its gas prices, from \$47 per 1000 m³ to more than \$200 unless it agreed to give Gazprom a 50 percent controlling stake in its gas export pipeline, which supplies Poland and Germany. Eventually Belarus surrendered the stake for a gas price of \$100, which will increase to world rates over a five-year period. Similarly, Armenia was forced to surrender key energy assets to Russia, including its gas pipeline from Iran, to avoid higher rates for Russian gas.

In each case, Gazprom insists that politics played no role in its decisions. To the contrary, Gazprom argues that its actions are meant to establish a purely nonpolitical, market relationship between itself and its customers. Furthermore, if Gazprom's actions were in fact politically motivated, it is impossible to know the degree of collusion between the company and the Kremlin, and whether the two collaborated in the plans. As a profitminded company,

Gazprom certainly gained by the price hikes in these cases. However, as a national champion, although Gazprom may be rewarded when the Kremlin wishes to punish a politically errant customer, it will also suffer when the Kremlin decides to reward a politically friendly or desirable regime. Without autonomy in its decision making, Gazprom's interests will always be secondary to those of the Kremlin; Gazprom's international business relations will be influenced first by the Kremlin's goals rather than its own bottom line.

Gazprom's usefulness as a national champion in the international sphere is not just limited to the Kremlin's political leverage. Through duties and taxes, the government claims approximately 65 percent of Gazprom's export revenues. The currency earned through exports is critical to Russia's economic health and has been one of the main factors in Russia's economic recovery since 2001. Oil and gas exports together account for 64 percent of export revenue and about 60 percent of federal budget revenue. This export revenue has allowed Russia to amass \$356 billion in foreign currency reserves, the third largest behind Japan and China. It has also allowed Russia to create a stabilization fund worth about \$100 billion and helped the country pay off its international debts.

Around 2000, Gazprom began thinking more like a profit-minded company and less like a social servant. Wary of the effect that cheap regulated electricity prices would have on demand for electricity, and the corresponding demand this would place on its natural gas, Gazprom began lobbying the government to begin a program of price deregulation for natural gas. Unregulated trading in natural gas actually began in 1998 when the government exempted independent gas producers from regulatory requirements. However, there was no hint at Gazprom's exclusion until December 2000 when the government decreed that the regulation of gas wholesale prices was only temporary. The government envisioned that regulated transportation tariffs for Gazprom would eventually replace regulated gas prices, as was already the case with gas independents. Apparently this was meant to give Gazprom time to determine the pricing methodologies it would use to promote its gas in a market environment that it would still dominate. However, it was also likely a ploy by which the government could delay that which they understood was necessary and inevitable to a more politically expedient time or perhaps indefinitely.⁶³

Because of widespread bankruptcy following the 1998 financial crisis, domestic demand for gas fell, but so did the price that Gazprom was allowed to charge. In 1999 the price fell to \$10 mcm from \$23 in 1998. Demand steadily increased with the economic recovery until

⁶³ Roberts, J., 'The Turkish Gate: Energy Transit and Security Issues', Working Paper 11, CEPS, October, 2004

2003, when Gazprom was allowed a price of \$29.7 mcm. But by this time Gazprom asserted that it had already lost \$25 billion through domestic sales. Gazprom then began to lobby the government for price reform, but the government was largely reluctant to jeopardize the still fragile recovery or disrupt the prevailing status quo that had come to rely on cheap energy supplies. Gazprom did, however, succeed with its proposal to reform the zoning price structure by increasing the number of zones from seven to fourteen to better reflect its operating and transportation costs farther from the wellhead. However, other proposals, such as the institution of variance in seasonal prices, went unheeded by the government.

The centerpiece of Gazprom's reform proposals was the ultimate deregulation of prices for industrial consumers. Lobbying for this goal began in earnest in 2002 with the proposal to create a gas exchange through which Gazprom could sell a portion of its output at unregulated prices. This was proposed as an experiment to ascertain a correct pricing mechanism for the day when gas prices would indeed be unregulated. The company proposed to sell up to 10 percent of its production this way to gain clues for market pricing, but the government refused. In 2004, Gazprom proposed a new three stage reform program by which (1) the average regulated price would equal Gazprom's average costs to cease its losses; (2) increasing portions of the market would be deregulated; and (3) complete deregulation with choice of suppliers would be achieved.

The Russian government, however, proposed a different solution to the approaching energy supply problem, which was essentially the usual solution. They preferred that Gazprom increase production through new field development to keep up with domestic demand and cover operating costs through exports. This solution, however, was fundamentally at odds with Gazprom's view that increased supply would lead merely to increased demand, greater waste, and larger losses. Given the expense involved in new field production (especially in the difficult environment of the Yamal Peninsula where the Kremlin most favors new production) Gazprom has exhibited great caution, as evidenced by Chairman Miller's oft-repeated assertion that no gas will be developed until it is sold.

By 2006, the Russian government began to acknowledge the wisdom in Gazprom's reasoning and began to consider more seriously its recommendations for price reform. Power consumption in twenty-four Russian regions, including Moscow and St. Petersburg, has increased an average of 5.8 percent a year since 2000. In the winter of 2005-2006, three regions, including Moscow, experienced energy shortages, forcing the authorities to place consumption limits on 604 businesses and warn another 1,300 that they might face cutoffs. In

May 2005, Moscow experienced a citywide blackout. As consumption grew another 4.4 percent in 2006 - and as high as 6.4 percent in Moscow-power authorities projected that as many as sixteen regions, including Moscow, would experience shortages in the winter of 2006-2007. Given that most power plants were already operating at maximum capacity, further supplies of cheap natural gas were irrelevant to a solution. The government was therefore forced to choose between two unattractive options: reform the energy sector to reduce demand in the short run by encouraging conservation and efficiency, or institute power rationing.

Sensibly, the government chose the former option and instituted a plan for price reform in the power and natural gas industries that exceeded even Gazprom's recommendations from two years earlier. Their reasoning was in line with Putin's declaration in his 2006 State of the Nation address in which he argued that the time had come for Russia to wean itself from its dependence on natural resource exports and begin to develop a modern manufacturing sector to produce high value-added products that could compete domestically and internationally and sustain the economy in the long run. This could not be done as long as the economy required twice as much energy per unit of GNP as other industrialized nations. It certainly could not be accomplished if industry was faced with chronic power shortages. Critics of the government's plan countered that it could also not be done if domestic industry was confronted with a twofold increase in energy prices. However, the government ultimately decided that the perpetuation of wasteful practices posed a greater long-term danger to the domestic economy than the short-term impact of price increases.

In June 2006, he announced that the authorities would be forced to deny 90 percent of applications from new businesses seeking a power connection. When it seemed that economic growth had reached its limit because of the overtaxed power system, the government announced a reform program for the natural gas and power industries.

However, the decision to raise the domestic price of energy was not only attributable to the looming domestic energy crisis. Putin viewed Russia's ascension to the World Trade Organization (WTO) as a crucial component of his plan for Russian industry. A central EU requirement for Russia's acceptance into the WTO was an end to its regulated gas prices for domestic industry, which amounted to an illegal subsidy. Negotiations in 2004 produced an agreement that domestic gas prices would raise to \$37-42 mcm by 2006 and \$49-57 by 2010. Ironically, the figure for 2010 was below the price target recommended by Russia's own Energy Strategy of 2003, which identified a 2010 price of \$59-64 mcm. This suggests that

because the Energy Strategy target is not legally binding, the EU had little faith at the time that Russia would have the political courage to enforce that goal without external prodding.

In November 2006, the cabinet approved a plan for an increase in regulated natural gas and electricity prices leading to complete deregulation by 2011. Under the plan, the price of gas for industrial consumers would increase 15 percent in 2007, from \$44 mcm to \$50.60. This would be followed by a 25 percent increase in 2008, a 26 percent increase in 2009 and a 25 percent increase in 2010. In 2011, the price would be completely unregulated and governed instead by market principles, reaching parity with world rates. This will probably be achieved by basing the domestic price on export netbacks: the domestic price will equal the average European price minus export tax and transportation fees back to the domestic zone in which the gas is being sold. There was considerable doubt both inside and outside Russia that it would abide by these increases, especially in the election year of 2008.

The corresponding plan for reform of the electricity market dictates price increases for industrial consumers of 10 percent in 2007, 9 percent in 2008, and 8 percent in 2009, after which the price will be unregulated. As impetus for the construction of new power plants, the government decreed that plants commissioned after January 1, 2007, would be free to set their own prices immediately, while older plants must follow the regulated pricing schedule. In addition to conserving gas through end-user conservation and the introduction of new energy-efficient power plant and industrial machinery, Putin also intends to decrease the share of natural gas in the overall balance of power-plant fuel. In his April 2006 State of the Nation speech, Putin promised heavy government investment in energy infrastructure. The government plans to build forty-five new nuclear reactors, fifteen coal-fired plants, and several hydropower plants. But the plans for the energy sector are actually far more ambitious. UES is being dismantled through a breakup of its generation, distribution, and sales networks in a plan to raise \$80-90 billion, which will finance new plant and power distribution infrastructure. While this will at least decrease the burden on natural gas, the long-term effects are questionable. Breakup of the monopoly was meant to initiate a market environment in which demand, cost of fuel, and fuel parity prices would interplay. However, Gazprom's recent announcement that it would merge its electricity assets with SUEK, the country's largest coal supplier, threatens to create a new monopoly. Coal is expected to compose 35 percent of fuel for power generation by 2020, up from 15 percent today.

The disparity between the projected rate of increase in gas prices and the projected rate of increase in electricity prices raises doubt concerning the feasibility of the plan. It is difficult

to see how the power generation sector in particular can offset the large increases in gas prices with the comparatively small increases in electricity prices that it will be allowed to institute. This may be intended as shock therapy for the power generation sector, to force them to immediately replace their Soviet-era generators with modern, energy-efficient machinery. Regardless of the government's rationale, the plan clearly places the burden of energy-sector reform on the power generation industry, which is arguably the right place for it. This burden will compel power plant owners to switch to alternative fuel sources, leaving the additional natural gas supply available for profitable export, and should spur the development of nuclear, hydro, and geothermal power plants.

The government's liberalized attitude toward gas and power sector reform also reenergized Gazprom's proposal for a gas exchange experiment with market-determined prices. Under the direction of Mezhhregiongaz, Gazprom's wholly owned distributor, Gazprom was allowed to sell 5 bcm of its output. Included in the exchange were also 5 bcm of gas from independent companies. This November 2006 experiment was deemed so successful that the allowance for 2007 was increased to 15 bcm (plus 15 bcm from the independents). After January 2007, Russia's Ministry of Industry and Energy agreed to increase the frequency of trading to ten days rather than once a month. The customers at these exchanges are industrial operators whose gas allowance from the state is insufficient to cover their needs. Traditionally they have bought gas from independent companies, which are allowed to sell at unregulated prices. The gas exchange experiment was meant to introduce Gazprom to the world of free market pricing by making a sufficient amount of gas available to deem the experiment meaningful, while the independent companies were included to introduce a modicum of free market competition. However, Gazprom's monopoly control of Russia's pipeline network trumps the experiment in competition. Gazprom sets the transportation costs for carrying third-party gas. Therefore, regardless of the price that a customer may receive from an independent, the distance that the gas must travel from the wellhead may make it unaffordable. Conversely, Gazprom charges itself about one-third of the rate for third-party companies. Electricity producers who have attended the gas exchanges have accused Gazprom of manipulating the market in this way.

Frustration with Gazprom's reluctance to invest in major new field development and concern for reliable domestic energy supplies has also caused the government to advocate more actively for independent gas producers. Independent gas companies presently account for around 25 percent of the domestic market. In 2006, they produced 95 bcm of gas. Soyuzgaz,

Russia's independent gas producer's union, predicts that it will increase production to 180 bcm in 2010, and Khristenko believes that by then independents will account for 45 percent of the domestic market. Novatek Chairman Leonid Mikhelson claims that the gas independents account for 23 percent of Russia's explored reserves, approximately 11 tcm. The independents have always been profitable, however modestly, because of the fact that they have not been subject to regulated price controls, as has Gazprom. However, they have been mostly limited to markets close to their wellheads, as they have been either unable to get access to Gazprom's pipelines or unable or unwilling to pay the transportation costs charged by Gazprom. Nevertheless, recognition of their importance to domestic supply was a great consideration in the government's decision to liberalize the gas market. The government expects that the higher profits that will be realized through price deregulation will stir the independents to increase production and begin new field development, which Gazprom has neglected.

Federal law allows pipeline operators (i.e., Gazprom) absolute control over the use of their pipelines. Gazprom claims to apportion pipeline access according to spare capacity. However, without independent oversight, only Gazprom can determine the amount of spare capacity. Moreover, Gazprom has often discriminated against independent suppliers to suppress competition in prospective markets. Gazprom nearly bankrupted Itera to blunt its access to Central Asian gas supplies coveted by Gazprom and to keep it from bidding up the price. Without access to the pipelines, some gas independents, such as oil companies that produce gas as a by-product, are forced to flare their gas. Estimates on the amount of gas flared in Russia by the independent oil companies range from 11 bcm to as high as 60 bcm.

A bill presently under consideration in the cabinet comprises a third component of Russia's new energy strategy. This bill aims to provide the independents with more equitable access to Gazprom's pipelines by requiring Gazprom to transport independent gas proportionately to the requests filed by independents. This should make it more difficult for Gazprom to discriminate between producers for ulterior motives, but the bill still allows Gazprom the discretion to judge the amount of spare pipeline capacity available for handling these requests. Significantly, however, the bill would also allow independents to form joint ventures with Gazprom to co-finance the construction of new pipelines that would connect with Gazprom pipelines. Such pipelines would be majority controlled by Gazprom. This will discourage flaring by expanding capacity, thereby making it easier for Gazprom to absorb more of the output from oil independents. Theoretically it will also give the independents greater

access to more distant customers. However, if Gazprom retains control over transport pricing, the independents may still find it more profitable to sell directly to Gazprom.

Given the size of the losses that Gazprom claims to incur in the domestic market, it should favor expanded production and market access for the independents. By retaining its monopoly on exports, Gazprom is free to transfer gas saved in the domestic market to more lucrative foreign markets, where gas commands a price as much as five times higher. In 2006 Gazprom renewed its contracts with its German, French, Italian, and Austrian customers to supply gas for up to twenty-five years. Gazprom realizes that without developing major new fields, by 2015 it may be unable to meet both its domestic and international commitments. The Russian government may be reluctant to allow Gazprom to interrupt domestic supplies, but defaulting on its international obligations could imply billions of dollars in penalties.

In consideration of its growing reliance on natural gas, the EU issued the Gas Directives of 1998 and 2003, which were aimed at liberalizing, or demonopolizing, the market by providing for greater access to transmission and distribution networks. The objective was to abolish the exclusive rights of national power companies and allow end users a choice of suppliers. This would theoretically drive down prices by introducing greater competition. However, it was also seen as an assault on long-term gas supply contracts, which power companies had traditionally negotiated with their suppliers, such as Gazprom. In place of these contracts, it was hoped that a spot market would develop. At the least, short-term contracts would prevail, which would be more susceptible to price fluctuations (although the huge fixed costs of physical resources such as gas processing plants would severely limit the potential of downward pressure on prices). These measures were opposed not only by Gazprom but by the European gas companies who understood the relation between guaranteed prices and guaranteed supply. Gazprom argued that it could not undertake expensive new development projects if it was not guaranteed a sufficient rate of return, while the European gas companies argued that without Gazprom's production they would have no gas to sell. The Gas Directives assumed an excess of supply over demand, despite the fact that Europe's potential supply is small and quantifiable, and its places of origin are few. To address this problem, however partially, Europe introduced the Energy Charter Treaty, which aimed to compel Gazprom to abandon its export monopoly and open its pipelines to Central Asian deliveries. However, Gazprom and Russia refused to sacrifice their natural advantage.

These measures unnerved Gazprom enough to further delay any new large-scale development projects. Although the Gas Directives ultimately reaffirmed the importance of

long-term contracts to the gas industry, Gazprom fears that position may change. By the time Yamal, for instance, would begin producing gas, the prevailing price in Europe might not be sufficient to recover its expenditures in development. For this reason, Gazprom has begun to hedge against price volatility in the European market by buying up distribution companies in Europe. National resellers sell gas to consumers at twice the price they pay Gazprom. Therefore Gazprom hopes to gain a greater share of end user profits. In the United Kingdom, Gazprom purchased Pennine Natural Gas in 2006 and in July 2007 purchased its sister company, Natural Gas Shipping Services. That gives Gazprom 4 percent of the British market, which Gazprom expects will expand to 10 percent. Also in 2006, Gazprom expressed an interest in Centrica. Gazprom's sales to the United Kingdom increased from 3.8 billion m³ in 2005 to 8.7 billion m³ in 2006. In 2008, Gazprom will supply gas directly to consumers in Italy and France.

Gazprom is also pursuing cooperation with Algeria, Europe's second-largest gas supplier, most likely with the intention of coordinating production, and has been exploring opportunities in Asia, with Japan, China, and Korea. They are eager to enter the liquefied natural gas market, which may account for 20 percent of all natural gas sales by 2010. They have also raised the prospect of a gas OPEC, which would coordinate pricing policies among gas-producing nations.

In this way, Europe's efforts to increase its energy security may have had the opposite effect. The Shtokman and Yamal projects have been repeatedly delayed because of concern over the cost of development and fear over likely returns. Development of Shtokman, which is estimated at \$20 billion, has only just begun. Production may begin in 2011 with amounts of 14 bcm per year but may not hit peak production of 70 bcm until 2020. Development of the Yamal Peninsula, which is Europe's greatest hope for sustained supplies, is still in discussion. That project is expected to cost approximately \$57 billion. With such a high price tag, Gazprom has been extremely reluctant to proceed.

Lack of profitability in the domestic market and uncertainty over European export prices are not the only impediments to Gazprom's pursuit of new field development. Gazprom has dedicated large sums to the development of export infrastructure that some critics view as unnecessary at best and a tool for foreign policy leverage at worst. The Nord Stream pipeline will effectively sideline Ukraine, Belarus, and Poland in the transit of gas to Germany, which is Gazprom's largest European customer. By freeing Gazprom from transit dependency, the project will allow much tougher pricing policies toward those countries and will allow the

Kremlin greater diplomatic leverage in its actions. (Poland, particularly, is engaged in a complicated trade spat with Russia at present. Without its role as a transit country, Poland's bargaining position will be substantially diminished.) But the price of this freedom to Gazprom will be approximately \$6 billion. The German companies E.ON, Ruhrgas, and Wintershall combined have a 49 percent stake in the project, though the exact financial obligations have yet to be meted out. This will lessen Gazprom's financial outlay, but for a company that is facing expensive new development projects, it may have been wiser to pursue a more constructive and less costly solution to Russia's problems with its CIS and former satellite neighbors.

The new South Stream project is a similar attempt to be free of third-party interference, namely Turkey. This project will bring gas across the Black Sea to Bulgaria, after which one line will go through Bulgaria and Romania to the transport hubs of Hungary and Austria. The second line will go to Italy, Gazprom's second-largest European customer. The project will be a 50-50 venture between Gazprom and Eni, the Italian counterpart. But regardless of the shared expense, the project still constitutes a huge financial obligation for Gazprom. Cost estimates for the project are as high as \$13.5 billion.

Gazprom's reluctance to take on foreign partners also contributes to the company's shortage of capital. In October 2006, Gazprom announced that it would develop the Shtokman field without international partners, to the consternation of several hopeful participants. Gazprom decided that it could simply purchase the services and expertise it needed from international firms and retain all profits from the 3.7 tcm supergiant field for itself. However, ultimately fearful of incurring the entire \$20 billion risk, Gazprom recently announced that the French company Total will be offered a 25 percent stake in the company that will design, finance, and build the infrastructure at the field. The deal is likely to include extra options for Total, but Gazprom is certain to retain at least 51 percent of the controlling venture.

Central Asian pipeline projects that bypass Russia, such as Nabucco, will be rendered superfluous and will therefore have considerable trouble attracting financing. As European dependency on Russian gas grows, so will the Kremlin's potential leverage over its customers.

While fear of EU intentions has certainly been a factor in Gazprom's development investment decisions, lack of domestic market profitability has been the primary obstacle to new large-scale projects. Much depends on the Russian government's courage to abide by the price targets and timelines that they have decreed. This is questionable. Although Putin has made a goal of weaning the economy from its reliance on natural resource production and concentrating more heavily on manufacturing, the spike in energy prices could strangle the

industrial sector while it is still in its nascent stage. The government may be reluctant to enforce price targets in the midst of an election cycle, despite the fact that the Kremlin parties have no serious opposition. Much will also depend on the priorities of Putin's successor. There will undoubtedly be strong opposition from the powerful oligarchs who own interests in manufacturing industries, although the Yukos affair and the example made of Mikhail Khodorkovsky will temper those who might otherwise protest too loudly against the Kremlin's wishes. Furthermore, there is no discussion of gas price reform for the private household sector.

Nevertheless, there are healthy signs that Gazprom is successfully rebelling against its subservient national champion role and asserting itself as an autonomous, profit-making, and profit-conscious company. For fifteen years Gazprom has supported Russian economic development through its patronage of the power and industrial sectors. The depletion of the traditional producing fields and the high marginal costs of new development have given Gazprom leverage against the government's desire to continue using the company as a national donor. Gazprom is successfully exploiting that leverage for its profitability and survival as a functional enterprise.

Reform of Russia's domestic natural gas and power industries is long overdue for the healthy development of the Russian economy. Price deregulation of electricity and natural gas for industrial consumers will lead to more rational use of energy and help Russian businesses compete domestically and internationally. This program will also lead to greater energy security for the EU. Gazprom's failure so far to proceed significantly with development of the new super giant Shtokman and Yamal fields is the most imminent threat to security of supply to the European market. The Russian program of energy price deregulation will mitigate this threat. In the short-term, as higher domestic gas prices reduce the demand for gas, greater supplies will be available for the export market. In the long-term, domestic profitability will guarantee that Gazprom can meet its marginal development costs, thereby encouraging the scale of development necessary to meet both domestic and international demand.⁶⁴

⁶⁴ European Commission, Energy Infrastructure and Security of Supply, Communication from the Commission to the European Parliament and the Council, COM(2003) 743 final, Brussels, 2000

3.2. The European energy market in relationship with Russia

The challenges to the EU and its member states in the energy sector are many: some issues are part of the wider geopolitical and geo-economic agenda, but some are also the product of the new EU that emerged after the fall of the Berlin Wall. The enlargement with member states that are asymmetrically dependent on oil and gas supplies mainly from Russia has further emphasized the growth of structural energy import dependency. Moreover, the new member states did not have the benefit of introducing the energy ‘acquis’, liberalization, in a period of ample supply and relatively low prices.

Regarding Russia, the chapter argues that the major threat to energy security does not come from the „energy weapon” – the threat of politically motivated gas „cut-offs” – but from the lack of investment in new gas fields. As a consequence, there is a serious developing threat to gas supplies to the EU as existing Russian fields go into decline. The solution to this problem is for Russia to liberalize its markets and improve legal security for investors to enter Russian energy markets by, for example, honoring the obligations under the Energy Charter Treaty and signing up to the Transit Protocol. The Russian state is currently opposed to such a development and the Kremlin can legitimately point to the EU and question why Russia should liberalize its gas market when the EU itself has signally failed to do so.

The chapter states for substantial and real market liberalization including ownership unbundling to begin liberalization and enhance energy security. In respect of Russia, the EU needs to focus on the real issue, the lack of gas supplies, and engage with Russia on the potential problems of falling gas supplies for both the EU member states and Russia.

Classically the EU gas markets were national markets in which a national energy company owned the pipelines and supplied the gas down the value chain, sometimes exclusively all the way to the consumer. In some markets, there may have been a number of retail companies but usually the national incumbent dominated the wholesale market and had exclusive import rights with any producers. The national incumbent had long-term supply contracts with both the retailers and the producers, which effectively foreclosed large parts, if not all the market to any potential competition.

Russia participated enthusiastically and was (and still is) part of this European managed-market system. Even after the end of the cold war, it continued, renewed or enacted

new long-term supply contracts (LTSCs) with the newly independent Eastern European states, and it continued to develop and renew LTSCs in Western Europe.

This managed-market system had its advantages. It provided a significant degree of predictability. The LTSCs certainly provided a means of funding major pipe construction programmes such as Yamal. It also secured the market to a few operators, minimized competition, limited innovation and kept prices high.

By contrast with almost all European markets (Spain and parts of Scandinavia being exceptions), under a Thatcherism ethos the UK liberalized its energy markets. As a result, the British market saw full ownership unbundling, the access of several players at the wholesale and retail levels and low gas prices compared with most of the rest of Europe.

Now in principle the single market rules applied to the gas market. Yet aside from some very early and weak single market legislation, along with the 1990 price transparency and 1991 transit directives, very little happened in the gas sector. In 1994, a European Energy Council meeting took the decision to prioritize the opening-up of the electricity market – effectively putting gas liberalization on the back burner.

The gas market only saw its first sector-specific liberalizing instrument in 1998, with the first gas directive. This directive was a relatively timid beast, however, in that it only required the unbundling of accounting, i.e. the separate accounting of the transmission pipes operation and the supply operation, and limited opportunity for third-party access to pipelines. It was only with the Lisbon European summit in 2000 that the EU member states formally committed themselves to market liberalization of the gas sector. That political impetus resulted in the second gas directive and gas regulation, which require legal unbundling (i.e. the formal separation of the national incumbents into transmission and supply businesses) along with the establishment of a national regulator to ensure third-party access to the supply network and binding non-discrimination rules. Under the second directive, commercial gas customers were supposed to be free to choose suppliers by July 2004, the residential customers have the ability to do so by July 2007.⁶⁵

Liberalization, if achieved, would have a major energy-security benefit. Moving from national managed markets to a single European energy market massively increases energy security. By simply being a much larger market, the EU is better protected from the

⁶⁵ http://ec.europa.eu/energy/index_en.htm

consequences of disruption. In a genuine, single European market, it is much easier to allocate the additional energy resources to deal with a market disruption than in a smaller national market.

Although the Central and Eastern European states have faced approximately 40 energy cut-offs since the end of the cold war, and may face some more, the major threat to EU gas supplies from Russia does not stem from the “energy weapon”.

The major threat in the gas sector is Gazprom’s lack of investment in new gas fields resulting in the company, despite 47 trillion cubic meters of gas in the ground, being unable to supply the EU with gas. According to former Russian energy minister, Russia already has a gas deficit between foreign and domestic demand and its actual gas supplies of 69 billion cubic meters (bcm) – which may explain why Russia was not able to fulfill its contractual supply requirements to some EU member states last winter. He conservatively estimates that the supply gap could be approximately 130 bcm by 2010.

Gazprom’s problems arise to a large extent from the need to supply a domestic market at very low prices, as a result of which the company does little more than break even in its domestic gas supplies.

Even with the revenues coming in from the EU, Gazprom still does not have the financial firepower to refurbish the Soviet-era pipelines and compressor stations or develop new fields, which would cost tens of billions of dollars. The International Energy Agency (IEA) recently put the figures required at over \$170 bn. Gazprom, it should be noted, is currently \$38 bn in debt.

A second factor is the lack (and perceived lack) of legal security in Russia for property rights, which makes Western investors wary of providing the scale of investment required. A third practical factor is that currently it is extremely difficult for Western investors to acquire upstream or downstream assets in the Russian gas sector (whereas by contrast Russian investors can easily buy up EU energy assets).

Part of the solution would be to honor the Energy Charter Treaty and sign up to the Transit Protocol, which provide guarantees of legal security to foreign investors to encourage Western capital to come into the Russian gas market. Currently, however, the Kremlin appears to be against such a development.⁶⁶

⁶⁶ http://ec.europa.eu/energy/security/gas_en.htm

If the EU wants to engage with Russia in respect of encouraging Russia to open up its energy market it must take real and effective steps to liberalize its own market. Evidence of substantial frustration of the EU's liberalization rules by the member states and domestic energy incumbents gives the Commission justification to bring out its big antitrust guns. The EU has two major weapons to enforce liberalization. The first is Art. 86(3), under which the Commission can adopt directives without recourse to the Council or Parliament requiring the member states to open up national markets. The second is the new power contained in Art. 7(1) of Regulation 1/2003, to adopt structural remedies against companies. Using these two weapons the Commission could potentially enforce liberalization in the gas and electricity sectors by ordering the complete unbundling of ownership.

Such a step would enhance EU energy security through the liberalization process and demonstrate to Russia the value of liberalization. In the engagement process, the point has to be made to the Kremlin that both the EU and Russia face real problems if the gas runs dry. Thus, it is in both the EU's and Russia's interest to encourage large-scale investment into Russian energy markets, with the EU providing the capital and Russia providing legal security through the Energy Charter Treaty. Russia is misunderstanding its own vital interests in restricting foreign investment.

The Russians do not have to listen to the EU on this point; they just have to take note of the policy of their ancestors.

Herein lies the problem: Russia does not have a strategic vision—not if, by strategic vision, one means a sense of where Russian leaders want the world to go and with what role for Russia, coupled with a reasonably clear notion of how to bring it about this not special in this respect. Countries—maybe most countries—rarely have something as grand as a strategic vision. They do have foreign policy objectives, which are integrated to a greater or lesser degree and in some order of priority. Most countries also have a strategy or strategies by which to apply means to these ends in Russia's case the integration is weak, and the order of priority is blurred. Hence, to look for a conscious and coherent design in use of energy in its Asia policy is to chase a chimera.

At a deep, elemental level, the reason for the void in case stems from three paradoxes. First, and most fundamentally, restored self-confidence and accompanying assertiveness mask very real insecurities second; Russia's basic posture suffers from a curious antonymous pairing: no one is enemy, and no one is an ally, while everyone is a potential partner, and everyone is a potential competitor. Third, for all the wind and dust stirred by the seemingly bold and far-

reaching foreign policy pronouncements of Putin, Lavrov, and others, for much of the last year little serious thought has been given to foreign policy, as leaders and pundits have buried themselves in the politics of Putin's succession.

Without question, over Putin's last four years as president, Russia recovered what earlier had been most lacking: a genuine sense of self-confidence. This stemmed partially from the liberation from vulnerability to debt provided by soaring commodity prices, partially from the swagger engendered by Russia's position as a major energy provider, and partially from the sense that the regime's firm political hand had checked and then reversed the chaos of the Yeltsin years. Putin and his supporters—a large number, indeed, including the bulk of the political elite—take considerable satisfaction from knowing that Russia is again seen as a player that counts, is in a position to assert its influence throughout the post-soviet region and no longer needs give deference to US policy preferences. Granted some of the puffery and threat-mongering is instrumental, designed to secure domestic political support by emphasizing that the world is a dangerous place, populated by others, particularly the United States, who would diminish, maybe even, destroy Russia were it not for the strong, knowing leadership of Putin, his team, and the man he has blessed as his successor.

But the renewed self-confidence rests on a deeper insecurity that apparently derives from two sources. On the one hand, Russian leaders are on edge over just how much control they have over events within the country. They know that formal political institutions, much of the media, and the electoral process are safely subordinate to their desires. However, they, beginning with Putin, seem to fear pressures just below the surface that could explode as a consequence of escalating violence in the north Caucasus, ethnic tensions elsewhere in the country, economic regionalism, and social upheaval, such as the street demonstrations that followed the decision to monetize social benefits in 2004.

Whatever projection one uses—to anticipate peak production of oil or gas and the decline that will then follow, to estimate the impact that growing domestic needs will have on export capacity, or to judge ability to patch together agreements with other energy exporters among the post-soviet states (and the limits of their capacity)—Russia over the next five to ten years will remain a crucial player in international energy markets. With a third of the world's known gas reserves and oil export capacity that will, under worst-case scenarios, remain at 3 to 4 million barrels per day, will figure in the calculations of every important energy importing country for some time to come. This will be particularly true of countries in Europe, and none

more so than the East European members of the EU, whose dependence on Russian gas will not go much below 70% of their needs (nor Europe as a whole, below 40%) Their need for oil will be nearly as great add to this Russia's enhanced significance because of its control over an energy transport grid crucial to the export of Caspian sea and Central Asian oil and gas, and Putin, his successor, and those around them have every reason to feature energy as central to their foreign policy.

If Russian leaders are thinking straight, presumably political objectives do figure prominently, because seizing control of the golden goose simply to fatten it or to guarantee the flow of revenue into the state treasury makes little sense. Doing it for the first reason is counterproductive, and for the second, unnecessary. On the other hand, managing the distribution of rents from energy is at the very heart of the leadership's domestic political strategy it alone goes far toward explaining their jealous determination to keep a strong hand over this sector.

The special character of the gas sector with the expensive transport infrastructure and long-term contracts combined with the growing worldwide consumption of energy and on the other hand decreasing energy resources in Europe are factors making sure that Russian energy companies and Gazprom in particular will remain as key players on the European energy market in the future as well. Are there also some positive indicators characterizing the EU-Russia energy relationship when analyzed from a European perspective? These questions will be discussed in this chapter.

From one perspective, Russian strategic energy goals can be divided into several economical and political goals despite some overlap between the categories. Economical goals include increasing Russian profits (1) by enhancing the Russian position in the energy value chain and (2) by choosing the best markets for selling the gas. Political goals include (3) bypassing transit countries, (4) gaining more political influence in neighboring countries and (5) blocking competition.

First, an economical goal of Russian OFDI is to enhance Russian profits by acquiring a better grip of the European energy value chain. Russian energy companies are interested in growing their roles in the value chain by purchasing various European energy companies, distributors, pipe line networks etc. This is due to the Russian motivation to enhance their position in the energy value chain where the Russian's have so far been left with only the role of a primary producer. Russian's are eager to get a better grip of the value chain by controlling European energy infrastructure. This has been evident particularly in the South Stream project

where Gazprom has acquired energy companies and important stakes in pipeline infrastructure in planned transit countries such as Serbia and Bulgaria.

This is also where the Russian energy OFDI strategy is different in comparison with the energy OFDI of other emerging market investor countries like for instance China. The Chinese are for the most part only trying to ensure their access to foreign energy resources instead of actually controlling the whole energy value chain. However, Russian bids to buy European energy infrastructure have often been met with suspicion and not all of them have been accepted. A good example of this is the Russian bid to control the Latvian ice free oil harbor of Ventspils which has a direct connection to the Russian oil pipeline network dating from the Soviet time. Some years ago the Latvians refused the Russian bid to buy a controlling stake in the oil harbor which led Russia to build the very expensive Baltic Oil Pipeline System which enabled Russia to export oil from its own harbors thus rejecting Latvia's role as a transit country.

Second, an economical goal of Russian OFDI is to enhance Russian profits by choosing the best markets for selling the decreasing gas production. Volumes in the Russian gas production have already peaked and current gas fields which date for the most part from the time of the Soviet Union are gradually being exhausted. New replacing gas fields have been found but significant investments in developing new fields have been lacking partly due to the fact that their utilization is considerably harder and more expensive compared to the current fields. At the same time Russia's domestic consumption of gas is in the rise. In fact, Russia is forced to supplement its own gas exports to Europe by purchasing gas from the former Soviet Republics of Central Asia. Hence, Russia is most likely to be unable to supply all its current and planned pipelines with gas. However, despite insufficient gas production the new pipelines represent possibilities for increased profits. With an extensive pipeline network Gazprom is able to benefit more from dynamic market forces just like in the oil market, which is not restricted by expensive and binding transport infrastructure to the same extent, Gazprom can sell its gas to the highest bidder and thus increase the price of gas.

Third, the political goal of bypassing transit countries is most apparent in the planned gas pipeline projects of North Stream and South Stream where the strategic objectives are evident in their geographical locations or even in their names, south and nord.

One key objective for Gazprom is to bypass the Eastern European transit countries, particularly from the northern and southern flanks of Europe in order to achieve a more direct connection with the large Western and Central European gas market. The bypassing of Eastern

European countries would reduce transit costs and dependence to transit countries. This is the same strategy that Gazprom is applying in Blue Stream in which the Russians bypass the anti-Russian countries of Caucasus with a direct gas pipeline from Russia to Turkey through the Black Sea. Most of all, as a co-owner of both new pipelines Gazprom would have a better grip of its utilization.

Fourth, the political goal of the planned new pipelines is related to the bypassing of transit countries because it appears that the Russians are trying to increase the level of their political influence in important transit countries like CIS members of Belarus and Ukraine. Should these countries lose their monopoly status as vital transit countries as a result of new planned delivery routes such as the North Stream, they would be much more vulnerable for Russian pressure in gas deliveries since these countries would no longer have the counter power of controlling gas deliveries through their territories to Russia's lucrative export market in Western Europe. The same logic applies to Russia's Blue Stream project and the Caucasian countries as well. Thus constructing new gas pipelines represents a possibility for Russia to exert political influence over the former Soviet republics. However, as an alleviating factor one must bear in mind that the former CIS republics are gradually starting to pay world market prices for their gas so possibilities for gas price disputes are likely to be fewer in the near future.

Fifth, the final political and to some extent also an economical goal of South Stream is to function as a block to the competing Nabucco gas pipe line. The Nabucco project is run by the European Union aiming for the construction of a gas pipe line from the Caspian gas producing region through Caucasus, Turkey and Southern Balkans into Austria thus bypassing Russia and diversifying the basis of European gas imports. However, should South Stream be built, it would certainly weaken the probability of constructing the competing Nabucco line since South Stream will use the same Caspian natural gas reserves as Nabucco thus exhausting the limited gas reserves before Nabucco. In addition, several energy companies in the Balkans have already agreed to be partners in South Stream thus reducing the probability of them engaging in another massive pipe line project. The Bourgas-Alexandroupolis oil pipe line discussed earlier, in turn, has the main objective of bypassing the Turkish straits as the sole possible oil transport route between the Black Sea and the Mediterranean.

Despite Russian strategic goals and Russia's importance as an energy supplier to Europe, one should also pay attention to some positive facts characterizing the EU-Russia energy relationship. First, the dependence between Europe and Russia in the gas sector is to

some extent two-sided which is mainly due to technical reasons. All the major Russian gas pipelines are headed towards Europe and at the moment, Gazprom is practically unable to export its gas anywhere else than Europe. So far the Russians have not utilized LNG-technology⁴ eagerly although it would enable more flexible export alternatives globally through sea deliveries. Second, Russian gas deliveries to Europe have an excellent historical track record. Russian gas has been delivered reliably to Europe since the politically sensitive times of the Soviet Union for over 30 years and relatively minor disruptions in the gas deliveries like Russian-Ukrainian gas disputes were not targeted against the EU countries. Instead the minor disruptions in gas deliveries were caused by disputes among the countries of the former Soviet Union.

Compounding the problems of Russia's conduct are the realities that Europe is indeed dependent on Russian energy, particularly Russian gas that the dependence is not uniform, and that European governments have widely divergent policies toward Russia. As noted above, the European Union's overall import dependence on Russian gas was 41% in 2007. However, taking gas production within Europe into account, Russian gas is only 27% of overall demand. Europe's oil dependence vis-à-vis Russia is about 15% of total consumption and 30% of imports, although some participants did not see this as a particular source of concern in the presence of a well-functioning global oil market that would allow Europe to purchase oil elsewhere (if at a higher price) if supplies were disrupted. Participants generally agreed that Europe's dependence on Russian energy imports was asymmetrical, in that if Moscow were to shut off energy supplies, Russian firms would forgo only the revenue from the gas or oil they did not sell, while Europe could suffer considerably greater costs as a supply disruption worked its way through complex modern economies.

Participants generally agreed that there is a considerable gap between Western Europe, on one hand, and Central and Eastern Europe, on the other, in their levels of dependence on Russian energy imports.

Many of the countries in Central and Eastern Europe were, of course, either component parts of the Soviet Union or members of the Soviet bloc. These countries were deeply integrated into an energy infrastructure and wider economic system designed around heavily subsidized Soviet gas and oil resources.⁶⁷

⁶⁷ Starr, Frederick and Svante E. Cornell, Eds., *The Baku-Tbilisi-Ceyhan Pipeline: Oil Window to the West*, 2005 Central Asia-Caucasus Institute and Silk Road Studies Program, Johns Hopkins University-SAIS, Washington, D.C. and Uppsala University, Uppsala, 2005

Building extensive new infrastructure today would be enormously expensive for economies that are both relatively small in the European context and, in some cases, still in transition. The fact that some of these countries are landlocked also limits their options.

In Western Europe, one participant explained, some countries, like the United Kingdom, have significant if declining domestic energy reserves, while others are able to rely heavily on exports from Norway (northern Europe) or North Africa (southern Europe). This limits their dependence on Russia today; however, as gas demand grows, Russian gas imports are likely to become more important.

Germany—the fourth largest consumer of natural gas in the world—sits between Western Europe and Central and Eastern Europe in its gas dependence on Russia. One participant reported that Germany depends on Russia for 43% of its imports, less than the 100% dependence of the three Baltic States, Romania, Bulgaria, and others, but much more than France's 24%, not to mention Spain and Portugal, which do not import gas from Russia at all. Germany also imports 90% of its oil consumption, much from Russia.

An American participant argued that Europe has very limited options in pursuing alternative sources of natural gas due to the current distribution of reserves and production capacity. According to this participant, Russia and Iran are the two principal potential sources of additional gas on a global basis. A European participant agreed, arguing that the planned Nabucco pipeline from eastern Turkey through Bulgaria, Romania, and Hungary to Austria would initially supply only about 1% of European demand, rising to 3-4% by 2018, and that Qatar is unlikely to develop sufficient liquefied natural gas (LNG) capacity soon enough to meet European needs. Although North Africa is another potential source of additional gas, participants viewed its capacity as insufficient alone and noted Gazprom's attempts to gain leverage there.

One European participant pointed out that Europe's increasing demand for gas will create a 23% demand gap (23% of demand will be unfulfilled, around 200 billion cubic meters per year) as early as 2015 without new imports—and several Europeans noted that this would put heavy pressure on Europe either to increase its dependence on Russia or, alternatively, to reach an arrangement with Iran. Because of the time frame required to develop energy infrastructure, any effort to pursue the Iranian option would have to begin soon—and some companies are already pursuing quiet contacts with Iran, though they are not in a position to move further under the current sanctions regime. Many acknowledged that Washington would

very likely try to discourage a major European gas deal with Iran and that this could create significant tension between Europe and the United States.

One European participant expressed optimism that greater LNG imports could allow Europe to reduce its dependence on Russia. However, another European differed, pointing out that LNG terminals are very expensive and are typically controversial in communities concerned about potential environmental and other quality-of-life impacts. This participant expressed doubt that European consumers (households) would be prepared to pay considerably higher energy bills

to cover the cost of LNG imports. In any event, the process will take some time and is unlikely to displace a major share of Russian gas on its own.

European countries' levels of dependence on Russia for energy imports have an impact on their policies toward Moscow but clearly do not define them: governments facing relatively higher energy dependence have been either more or less tough toward Russia (such as Poland and

Germany) in dealing with Russia and governments less concerned about dependence have likewise been either more or less tough (such as the UK and France). This is a result of the fact that while energy is a key interest for all European countries, each has other circumstances and objectives that shape key policy decisions. Not to mention that these circumstances and objectives can change over time.

Several participants agreed that the European Union's continuing inability to establish a common energy policy is a major problem for Europe in dealing with its gas dependence on Russia. Europe has been unable to deal with its own energy monopolies, some said, and as a result has national gas markets rather than one European market.

Infrastructure limitations add to this challenge, one participant added, in that national gas networks would need to be linked by connecting pipelines—but this is extremely hard to do because of significant price differentials between markets. Political obstacles to a common energy policy remain substantial.

Broader policy differences toward Russia are also a major obstacle for Europe in dealing with Moscow's new assertiveness. While there are significant differences of opinion within Germany regarding policy toward Russia, the German government has focused on an engagement strategy with Russia to secure essential gas supplies.

Participants in the dialogue sessions agreed broadly that Russian-Polish relations are a key element in Europe's broader relations with Russia and discussion in both the Berlin and

London workshops focused extensively on ties between Warsaw and Moscow and included Polish participants. Some European participants expressed concern about Poland's approach to the Kremlin, suggesting that Warsaw was essentially trying to settle scores with Russia at Europe's expense by provoking confrontation and then calling on EU members to demonstrate solidarity. Several participants were sympathetic toward Poland's challenges in dealing with Moscow, especially in view of its historical experiences, but nevertheless argued that the time had come for reconciliation. One Polish participant agreed in principle, saying that Russia was a major power and that Poles need to accept the fact that their country is not. This is clearly quite difficult as a practical matter, however. Another Polish participant was disappointed with Europe's weak support for Warsaw and suggested that some EU countries see Poland as a second-tier EU member and also do not particularly mind if its industries are less competitive because of higher energy prices.

In reviewing Poland's gas dependence on Russia, an American participant stated that Poland relies on Gazprom for approximately 60% of its gas imports. A Polish participant added that the country relies almost entirely on coal-fired (95%) and hydroelectric (5%) plants for electricity and uses gas predominantly for its petrochemical industry and residential heating. An American participant argued that Poland's petrochemical industry is largely a legacy of the Soviet period, constructed at a time when Warsaw counted on large volumes of subsidized Soviet gas and Moscow was prepared to provide it to a satellite state. This participant questioned why Europe should enter into a confrontation with Russia to avoid restructuring a Polish industrial sector that may not be viable under current conditions; the answer was that it would be politically very difficult for Poland's government to sacrifice jobs in the petrochemical sector. A Polish participant added that Poland may build 1-2 LNG terminals, possibly in Gdansk, to reduce dependence on Gazprom. But the participant added that this would not be simple, because Poland's natural gas monopoly would want exclusive access to the facility—while the European Union's bureaucracy would probably oppose this.

More broadly, a European participant explained that Russia and Poland have incompatible objectives: Poland (like other Central European states) wants to have leverage over Russian gas as a transit country, while the Kremlin rejects the idea that its former satellites should have any leverage of this or any other kind. Moreover, to the extent that either acts on these goals, it further reinforces the other's concerns and prompts additional steps by the other party.

The conflict over gas between Russia and the Ukraine is becoming somewhat of a new year tradition. With the onset of winter the negotiations on price and transit fees between the various gas companies of both countries and their governments commence; some year they come to an agreement in the nick of time and twice they did not, in 2006 and 2009, leading to a disruption of the gas flow to the European Union. This year the prime ministers of both countries met early on and signed a memorandum of understanding, making it appear that this time round the countries leaders and their companies would settle their business before the expiry of the contract. Yes of course they would leave the fine details to the holiday season and as a belated Christmas gift they would settle their differences with the New Year's clock counting down. They would settle because it would be no interest on either side in repeating a disruption of supplies to the EU. Russia would not want to jeopardize its reputation as a reliable supplier, certainly not in the midst of an economic crisis, while the Ukraine would not want to antagonize the countries that it wanted to join in either NATO or the EU. Or so we thought.

And when supplies were interrupted a few days into the conflict, questions were immediately raised about EU supply reliability, including from unsuspected organizations such as the IEA. When supplies to the EU were cut, many observers were wondering about the deeper reasons why companies such as Gazprom and Naftogaz and states like Russia and the Ukraine are managing their conflict in such an unprofessional and emotional way.

We are all familiar with case and the issue. The EU is currently importing Russian gas through pipelines of about 120 bcm a year, covering about 25 % of its total gas consumption of 480 bcm and it represents about 80 % of total Russian gas exports. Of these exports about 80% is moving through the Ukraine. The Ukrainian market is with an annual consumption of about 65 bcm one of the largest "European" gas markets and due to its falling domestic production (19 bcm in 2007) increasingly dependent on imports from or via Russia. The pricing of the gas for the Ukrainian market and the transit conditions for the gas destined to the EU market has been a continued source of conflict between the two countries since the early 1990's. As long as oil prices were relatively low the problem remained concealed for EU eyes, but when oil prices increased in the late 1990s, and gas prices followed suit, the stress and strains of these increases began to be felt by a transition economy such as the Ukraine. And it must be sad, this conflict also became more and more unmanageable since the Ukraine's Orange revolution, when some of the Ukraine's leadership also admitted to a more Western orientation. So it

became apparent to many observers that there is also a political dimension to this conflict between two post-Soviet states.

The week-end of January 17-18, 2009 seems to have brought good news. Both sides announced that the two prime ministers had struck a deal about prices and transit fees. They said to have agreed to eliminate the intermediary companies that they had accused of funneling profits from their multibillion dollar a year gas trade to political parties, and that final contracts were imminent. Russian television reports that the Ukraine would pay double last year's price of \$179.5 per 1,000 cm were however contradicted by Ukrainian estimates, which put the new price at less than the \$250 earlier demanded. Gazprom said the new price would be pegged to a European formula and would fluctuate throughout the year. Other contentious issues, including Naftogaz's alleged debt to Gazprom, and the question of which party would pay for the so-called technical gas that powers turbines on transit pipelines, appeared to be unresolved. It all looks as if the two sides had "agreed to agree", risking however that further disputes might erupt again in future.

Two things come to mind. What should we think of this and what should be the EU reaction. Of course, from an ethical point of view, the way in which the major players have acted or are still acting in their own irresponsible way should be heavily rejected. And that goes beyond question, no misunderstanding. A more political, realistic and even cynical reaction would however that be apparently the problem with Kiev is that its decentralized organization of corruption is more difficult to manage than Moscow's centralized one. As to the other question, the EU reaction, three routes could be considered. Redefining the EU approach vis-à-vis Ukraine is one thing. Speeding up alternative supply routes is another question. And, finally, enhancing and deepening the dialogue with Moscow on energy matters.

3.3. European Energy Security and Russia's Natural Gas Supply Disruption

Europe's dependence on Russian gas has become a central issue in the European Union's internal debates about its relationship with Russia and its energy policy.

On January 1, 2009, Russia's state monopoly OAO Gazprom began reducing gas supplies to Ukraine. Moscow and Kiev had failed to negotiate the price for natural gas, and the initial reduction affected six additional countries: Czech Republic, Turkey, Poland, Hungary, Romania, and Bulgaria. As problematic as this was, the crisis has extended beyond these initial victims. Not surprisingly, Russia is losing its reputation as a reliable supplier of gas to Europe. Motives for the Russian action include sending a signal to Europe that Ukraine should not be integrated into the Euro-Atlantic zone, but remain within the Russian sphere of influence.

Fig. 12



The crisis demonstrates Europe's strategic dependence on Russian gas and highlights the necessity to change this situation quickly in order to prevent Europe from being taken hostage by Russia.

Russia began halting supplies after Ukraine rejected a proposal to raise gas prices in 2009 to \$250 per 1,000 cubic meters from the 2008 price of \$179.50. This was considerably below European market price, and Russia claims that Kiev owes more than \$600 million in late fees and fines. Subsequently, Gazprom escalated tensions, saying that it initially wanted Ukraine to pay \$418 per cubic meters, and then \$450.

On Monday January 5, four days into the dispute, Prime Minister Vladimir Putin appeared on Russian television with Gazprom chief executive Alexei Miller and ordered supply to be cut by about 20 percent, withholding 65.3 million cubic meters of gas. Russia alleges that Ukraine is siphoning off an equivalent amount without paying for it.

As of January 6, eleven European countries had been affected by this disruption: Greece, Macedonia, Serbia, Poland, Slovakia, Romania, Hungary, Czech Republic, Italy, Turkey, and Croatia. Amidst temperatures as low as 0 Fahrenheit, the demand for heating is growing. Most countries have some gas storage to outlast a short disruption, but if the crisis continues for weeks, these supplies will run out.

It is clear that Russia has not ceased its efforts to use energy as a weapon, while Europe and particularly Ukraine have made themselves vulnerable by failing to diversify their energy baskets to expand the role of nuclear energy and coal, to modernize their energy-intensive industrial base to make it more efficient, and above all, to develop a coherent policy toward their Russian supplier. Europe has clearly made itself vulnerable by relying too much on Russian energy, while the national governments and the European Union failed to develop, coordinate, and implement effective policy which could have prevented the current predicament.⁶⁸

Many Europeans look to Russia because Europe's own domestic gas production is in decline, while demand is likely to rise for another decade. Demand is projected to increase dramatically. In 2007, European demand for gas was 500 billion cubic meters (bcm) a year and is expected to rise to 800 bcm within the next decade, according to most forecasts.

With the largest proven natural gas reserves on the planet and a massive pipeline network built mostly in the Soviet era, Russia has a natural leverage in supplying energy to Europe. Gazprom currently provides EU members with one-quarter of its gas--about 160 bcm per year; Gazprom officials hope that this number will climb to 250 bcm per year by 2020.

⁶⁸ Tassinari, F. (2006) 'A synergy for Black Sea regional cooperation: guidelines for an EU initiative' *CEPS Policy Brief*, No.105, June.

Ukraine is a key energy transit state for producers in Russia and Central Asia to European consumers. Around 80 percent of Europe's gas imports from Russia travel through Ukrainian pipelines: approximately 120 bcm per year. In turn, Gazprom receives around two-thirds of its revenue from gas that passes through these pipelines, representing 20 percent of European demand.

Germany is dependent on Russia for close to 40 percent of its gas and this number is expected to rise to 60 percent by 2020. Some European countries are entirely dependent on Russian gas, as high as 80 to 100 percent, such as Slovakia, Finland, Bulgaria, Greece, Serbia, Montenegro, and Macedonia. Many of the Baltic States and the Commonwealth of Independent States are also 80 to 100 percent dependent on Russian gas, such as Belarus, Lithuania, Armenia, and Georgia.

The Kremlin uses this dependence as a foreign policy tool to apply pressure against states that would adopt policies that go against Russia's national interests. Moscow has cut off supplies to numerous countries over the last seven years with Ukraine as the primary target.

Russia is escalating the gas crisis in order to prove to the Ukrainian people that President Victor Yushchenko and Prime Minister Yulia Timoshenko are discredited leaders, who caused energy shortages in the middle of a harsh winter. This is the price Ukrainians must pay, some in the Russian leadership imply, for pursuing a pro-Western path toward NATO membership. Russia demands that Ukraine abandon its road to NATO and the EU, and allow Moscow to base its Black Sea Fleet in the Crimea after the current agreement expires in 2017. If Ukraine runs out of gas reserves, this is a lesson many Ukrainians will not forget quickly.

Gazprom has pressured Ukraine to pay higher prices since the election of the pro-Western Victor Yushchenko. Some experts view the current price war as outright economic warfare against Ukrainian independence. Shutting off the gas to Ukraine denies the country valuable transit revenue and undermines the government's reputation as an energy transit state.

While Gazprom has raised the price of gas to most of the customers in the former Soviet Union in recent years, allies such as Armenia continue to pay lower rates, while "problem" states like Georgia pay full price.

The Russian leadership wants Ukraine to lose its leverage over Gazprom as a transit country. Moscow is hoping to make Ukraine appear an unreliable partner to the Europeans, which it believes will justify building expensive Russian-proposed gas pipe lines to Europe bypassing Ukraine. Some European governments, notably those of Germany and Italy, would now support these "direct" pipelines which bypass Ukraine, such as Nord Stream, chaired by

the former German Chancellor Gerhard Schröder, and the South Stream along the Black Sea bottom. Yet, concerns over excess dependence on Russian energy, the current economic crisis, and high costs of these projects raise questions about the timetables and affordability of the new pipelines from Russia.

The astronomic price tag for both projects, over \$30 billion, makes them seem less feasible today than even a year ago. Furthermore, the pipelines proposed by the Russians would only increase Europe's dependence on Russia. The more Germany and Italy's dependence on Russian gas increases, the less they would be inclined to stand up to Russia over any foreign policy excesses.

Ukraine is not without blemish, as its leaders have made it vulnerable to Russian tactics and pressures. Ukraine's manufacturing sector is notoriously inefficient, producing a mere 10 percent of Germany's output, while consuming as much energy as Germany does. Ukraine's energy sector suffers from lack of transparency and from corruption, regardless of who is in power in Kiev.

Swiss-registered RosUkrEnergo, for example, was in charge of marketing gas from Russia and Turkmenistan until October 2008. This company is a shady entity with allegedly illicit ties, and is an intermediary that benefits businessmen and government officials who prefer anonymity. RosUkrEnergo, like a number of other middleman companies Russia has set up in Europe, is a gas-trading company that does not own any gas fields or pipelines. It is also not the first middleman company in the Russian-Ukrainian gas trade.

RosUkrEnergo was created in 2004 and is owned jointly by Gazprom and two unknown Ukrainian businessmen for the benefit of themselves and unnamed government officials. Experts have pointed out that the company appears to have links to organized crime. Despite the lack of transparency, Gazprom has insisted on the continuing role of RosUkrEnergo in the Russian-Ukrainian gas trade. In October 2008, Ukraine and Russia agreed that their government-owned gas companies, Naftogaz and Gazprom, will deal directly with each other.

The Ukrainian state-owned energy sector remains overly politicized, mismanaged, and laden with conflicts of interests. By now, Ukraine should have taken steps to modernize its energy sector, including privatization and getting rid of the shady middlemen.⁶⁹

⁶⁹ www.jamestown.org/edm/article.php?article_id=2371171

The Kremlin derives leverage from its control of gas production and supply networks. It uses its energy supplies to divide Europe on key issues, thus weakening Europe's bargaining power in economic and geopolitical relations with Russia.

This dependence increases Europe's "continental drift" from the U.S. by limiting the foreign policy options available to America's European allies, and forcing them to choose between an affordable energy supply and siding with the U.S. and NATO on key strategic issues, such as missile defense or opposing Russia's treatment of Georgia. U.S. interests lie in strengthening its European allies in their dealing with Russia, promoting transparency and energy security in Ukraine, and supporting Ukraine's course for Euro-Atlantic integration.⁷⁰

In light of these circumstances, the U.S should:

- **Support** European diversification of energy transportation routes in Eurasia. Specifically, the U.S. should support the construction of the Nabucco pipeline which would bring gas from the Caspian basin, via Azerbaijan and Georgia, to Europe. The U.S. should oppose any excessive dependence of its allies on Russian energy exports and should encourage application of the European anti-trust legislation against Gazprom. It will also be necessary to encourage EU members to establish and implement a joint policy on their dealing with Moscow in the energy sector.
- **Encourage** Europe to construct more liquefied natural gas (LNG) terminals, importing gas from Qatar, Algeria, and Nigeria, thus diversifying the sources of gas. Moreover, Germany, Italy, and other countries in Europe should be encouraged to develop coal, nuclear power, and competitive renewable as sources of affordable electricity.
- **Support** Ukraine's efforts to modernize its energy sector, including reforms to increase transparency and energy efficiency, privatize and liberalize oil and gas sectors, depoliticize management, and decisively remove middlemen in energy transactions.

As frigid Arctic winds blow across Europe, it is time to face the cold facts: Dependence on Russian gas is undermining European security. Russia is likely to use its energy muscle to impose its geopolitical agenda on its neighbors, today and in the future. To change this situation, European countries, including Ukraine, need to work with the United States to diversify sources of energy and stand up to Russian bullying.

The Russian-Ukraine gas row revealed that the current situation characterized by a double monopoly – Russian monopoly on gas supply and Ukrainian monopoly on transit

⁷⁰ http://ec.europa.eu/energy/strategies/index_en.htm

system – is no longer sustainable for the European needs and the centrality of the Caspian oil and gas to the problem of diversification away from the dependency on Russia is frequently highlighted.

3.4. Russia's usage of the energy weapon

“Energy is, at least today, the most important motive force of the world economic progress. The present and future prosperity of Russia depends directly on the place we occupy in the global energy context” (Vladimir Putin)⁷¹

The former deputy head of the Presidential Administration, Vladislav Surkov stressed that Russia “need to choose that which will work for us, and simply do it better. The concept of Russia as an energy superpower, it seems to me, fully corresponds to this approach. If you have strong legs, you should compete in the long jump, not play chess”.⁷²

This extravagant opinion offered us the view that oil and gas is for today's Russia what nuclear weapons were for the former Soviet Union.

Fig. 13 – Russia



Russian power and influence is no longer measured in ballistic missile accuracy or bomber production but in miles of pipeline constructed and barrels of oil per day exported, and for Europe, this energy invasion has already begun.

⁷¹ Russia's National Council

⁷² Idem ¹

Because there is little unity among member states' energy policies, Russia who is the European Union's primary oil and gas provider, has deliberately taken advantage of this lack of cohesion to gain favorable energy deals and heighten European dependence on Russian supplies.

Moscow is pursuing a divide and conquers strategy of amassing bilateral deals with member states. This disunity has also allowed Moscow to preemptively block European attempts to construct transport routes for Caspian and Central Asian oil and gas that do not involve Russia.

Given Russia's high-level political involvement in energy issues, the EU needs a corresponding degree of intensity. Specifically, Europe must realize the very real foreign and security policy ramifications that the supply of energy has. Enhancing cooperation on energy security within the EU is essential to withstand Russian pressure.

The lack of reliable and sustainable European access to energy represents a clear threat to the continent's security. Under the leadership of Putin, the Kremlin has pursued a strategy whereby Europe's substantial dependence on Russian energy is leveraged to obtain economic and political gains. If this situation continues also under the president Medvedev, the EU will find itself in further danger, as its dependence leaves it beholden to Russian interests.

For the time been there is simply no other available alternative to the supplies that EU receives from Russia, particularly natural gas. Unlike oil, gas is extremely difficult and costly to ship via tankers; pipelines are the preferred method of transportation. Thus, if a supplier refuses to provide gas or charges an unreasonable price, the consumer cannot quickly or easily turn to another source.

The consumer state would have no choice but to accept the supplier's conditions or go without natural gas, an option that is all but unacceptable for most.

The unjust manipulation or interruption of energy supplies represents as well as a security threats as much as a military action, especially since the EU relies on Russia for more than 30 percent of its oil imports and 50 percent of its natural gas imports. The bigger problem is that this dependence is not even equally well distributed.

In the Eastern Europe, Russia's share of the energy supply grows ever larger. No fewer than seven eastern European countries receive at least 90 percent of their crude oil imports from Russia, and six European countries are entirely dependent on Russia for their natural gas imports.

The Ukrainian gas crisis in January 2006 catapulted energy security to the forefront of the EU agenda. On the very day it took over the presidency of the Group of Eight (G-8)—a presidency that had announced energy security as its key theme—Russia halted natural gas deliveries to Ukraine. Because the gas pipelines crossing Ukraine carry supplies destined for EU markets, this shutdown resulted in significant supply disruptions for several member states, raising awareness that dependence on Russia has increased Europe's geopolitical vulnerability.

Several EU states have experienced the misfortune of Russian supply cuts directly. Disputes between Russia and the Baltic states have led to the interruption of the pipeline deliveries of oil multiple times. In January 2003, Russia cut supplying oil via pipeline to Latvia's Ventspils Nafta export facility. This embargo, which followed Riga's unwillingness to sell the facility to a Russian energy company, continues to this day.

In July 2006, Moscow shut down a pipeline supplying Lithuania's Mazeikiu Nafta refinery, which is the largest company in Lithuania and one of the biggest oil refineries in central and Eastern Europe. As with Ventspils Nafta, this shutdown came after a Russian company failed to obtain the desired energy infrastructure.

Russia's attacks on Georgia in 2008 are another important example of a grand historical tradition – the energy war. The conflict had all the hallmarks of a typical energy war, which includes attacks on critical energy infrastructure. The multinational energy companies were in alert as they watch the world's second-longest pipeline, which moved 1 million barrels per day across Georgia, suffered the attacks of dozens of missiles from Russia.

The last question mark concerning the energy security was the Ukrainian gas crises from the very first beginning of January 2009. Russia asked a bigger price that Ukraine could not afford it and in reply they cut the gas supply leaving Europe in cold.

This situation put the energy as a major priority in the **Check presidency** schedule and opened again the discussion regarding a European strategy related to the Nabucco project in order to reduce Europe's dependence of the Russian gas.⁷³

Moscow instead, has further sought to increase Europe's dependence on Russian energy supplies by acquiring significant stakes in the energy distribution companies and infrastructure of EU member states, typically through its proxy, Gazprom. This massive energy company — the world's largest — has control over the Russian gas pipeline network and consequently handles all Russian and Central Asian exports, either directly or through wholly owned

⁷³ McCracken, R., "Russia Reasserts its Foreign Policy Power through Energy and its Infrastructure", *Energy Economist*, Vol. 294, April, pp. 23-26, 2006

subsidiaries. Such a preponderance of power would be troubling enough if the companies were transparent, privately owned, and played by the rules of the free market, but Gazprom is none of those things. It is majority state owned and has deep ties to the Russian government. Many of the company's executive management and board members also occupy or previously occupied key positions within the Kremlin.

For many years, Gazprom has owned significant portions of energy companies throughout the former Soviet Union. It is the largest or second-largest shareholder in the gas utilities of Estonia, Latvia, and Lithuania. Recently, Gazprom has been expanding its influence even further into the domestic gas distribution networks of Western Europe. In the past two years, Gazprom has signed deals with Eni (Italy), Gasunie (the Netherlands), BASF (Germany), E.ON Ruhrgas (Germany), and Gaz de France. Desperate for access to energy and the profits it brings, European companies are played against each other by the Kremlin in order to secure more advantageous conditions for Russia. If one company does not want to agree to Moscow's terms, a competitor will gladly accept them, leaving the first company with nothing.

In addition to the economic disadvantages of such dependence, the broader foreign policy goals of EU states also suffer. Specifically, EU members limit their criticisms of Moscow, lest they be given a raw deal at the negotiating table. Russia's increasingly tainted record on transparency, responsible governance, and human rights are thus allowed to stand unchallenged and unquestioned. Dependency also erodes EU support for key allies in Europe and Asia. Azerbaijan, Georgia, Kazakhstan, Turkmenistan, and Ukraine—all crucial energy producers or transit countries—have each been subject to intimidation by Moscow. Instead of standing up to this harassment, Europe's dependence compels its leaders to look the other way

Most disturbing of all is that this dependence even leads the EU to turn a blind eye when Moscow utilizes these tactics against fellow EU members. The July 2006 shutdown of the Lithuanian pipeline, for example, drew little protest outside of Poland and the Baltic states. Russia claimed that this cutoff was the result of technical difficulties yet refused all offers from third parties to examine the damaged pipe or assist repairs in any way. Although this incident is suspicious enough on its own, it becomes a clear case of political manipulation given Russia's status as a repeat offender.⁷⁴

⁷⁴ Triantaphyllou, D., Tsantoulis, Y., .Looking Beyond the Georgian Crisis: The EU in Search of an Enhanced Role in the Black Sea Region,. International Centre for Black Sea Studies (ICBSS), Policy Brief No. 8, October 2008

Many times over the past decade, Moscow has utilized near-identical tactics in countries it considers to be its near abroad. It has repeatedly cut off energy supplies during a political dispute, smugly blamed technical difficulties for the problem, and eventually shifted supplies to another destination unless the victim acceded to the Kremlin's demands. Despite this history and repeated pleas from President Valdas Adamkus, the response from most western European countries was rather muted during the Lithuanian shutdown. The countries of the West have never experienced these strong-arm tactics firsthand and fail to view it as anything more than an economic dispute. Moreover, they were too concerned that standing up for Lithuania would ruin their chances to get preferential access to Russian oil and gas resources. By design, the Russian strategy is driving a wedge between eastern and Western Europe, exacerbating the challenges the EU faces in devising a common energy policy, as was seen during the dispute between Poland and Germany ahead of the June EU summit. This diplomatic row was ostensibly over Russia's failure to remove its embargo on Polish meat products but more broadly involved the perceived reluctance of Berlin to stand up to Moscow on a whole host of issues, not the least of which was energy.

The EU's inability to take Russia to task for its illiberal market actions threatens European energy security in another way. It decreases efficiency in an already inefficient Russian energy industry, raising costs for consumers. Russia's increasingly state-owned energy industry is largely unregulated. Without competitive market forces, companies such as Gazprom have no reason to behave like commercially minded entities. The absence of market stimuli is having detrimental effects on Russian productivity. Between 1998 and 2005, output in Russia's then-mostly privately owned oil sector rose by 50 percent. During that same period, production in the gas sector (Gazprom) barely grew at all. Since 2004, when the Kremlin began its consolidation over the oil sector in earnest, Russian oil production has leveled off as well.

Due to the extremely close relationship between the energy industry and the Kremlin, Russia's oil and gas companies can pursue strategies that make little economic sense but that serve the long-term interests of the Russian state, namely, ensuring European dependence on Russian energy supplies. For example, Russia's under sea Nord Stream pipeline will cost at least three times more than a proposed overland route through Lithuania and Poland would have. Given the environmental sensitivity of the Baltic Sea, some industry insiders are predicting costs as high as \$10 billion or even \$15 billion.

By divorcing Western Europe's gas supply from Eastern Europe's, however, the undersea route grants Moscow the ability to manipulate the European energy market more

effectively. Needless to say, the unnecessarily high cost of the pipeline's construction will be passed on to European consumers. Many industry experts have expressed concern that corruption and inefficiency, coupled with Moscow's refusal to allow significant foreign investment in the energy sector, will soon lead the Russian oil and gas industry to burn out.

Instead of developing new oil and gas fields or investing in its energy infrastructure, Russia has utilized windfall profits to pursue the aggressive policy of expansion and acquisition described above. Unless Moscow is able to secure additional gas supplies from fields in Central Asia, it may struggle to meet its commitments to Europe, which is why maintaining full control over Central Asia's export routes is so critical for the Kremlin.

Diversifying oil and gas supplies by constructing pipelines directly from the Caucasus and Central Asia to Europe would not only decrease Russia's influence on EU countries but would also loosen Moscow's grip on Europe's neighbors.

Until late 2006, Russia purchased natural gas from the Central Asian republics at a rate of about \$45 to \$65 per thousand cubic meters (tcm). It then sold that gas (and/or Russian-produced gas) to western European countries for around \$230 per tcm. Even the tremendous distances that must be traveled cannot account for the increase. Per kilometer, this markup is far higher than that which occurs between Canadian supply hubs and distant American consumers. To be fair, part of this disparity arises because of the horrific inefficiency of Gazprom. The rest is simply a rent that Moscow is able to extract because of its near-monopoly power. This becomes blatantly obvious when one considers that Russia currently sells gas to Georgia for \$230 per tcm, despite paying only \$100 per tcm for gas purchased from nearby Turkmenistan. It is Tbilisi's commitment to the West, not the market that is determining the price of gas in Georgia.

Now, the EU and the United States are again supporting two gas pipelines directly to Europe, one from Turkey to Greece and Italy, called TGI, and the second from Turkey across Bulgaria, Romania, and Hungary and into Austria, known as Nabucco. Access to Azerbaijani gas supplies is particularly important. If the upstream investment in the Shah Deniz field can be accelerated, significant quantities of gas could flow from Azerbaijan to Europe in a very short time. The expectation is for Azerbaijan to start sending small volumes of gas to Greece by the end of this year, and in nine years, Azerbaijan could export one-third of the amount that Russia currently sends to Europe. Undoubtedly, this will require significant lowering of market access risks for investors. One way of achieving this is the further diversification of export possibilities to the European markets, such as through the TGI and Nabucco gas pipelines.

Knowing this, Moscow is once again trying to preempt these two pipelines to preserve its market dominance. While the EU is trying to coordinate its policies, Putin is sealing deals.

Moscow reached an agreement with Greece and Bulgaria in March 2007 to send Russian oil via a new pipeline, Burgas-Alexandroupolis, which is being constructed in their territories. Putin also tried to secure direct access for Gazprom to TGI and Nabucco but was confronted by Western opposition to Gazprom's involvement in either project. Putin quickly changed tactics. On June 23, 2007, leaders from Russia and Italy announced their intention to construct a massive gas pipeline to be known as South Stream between their two countries.

The announcement of South Stream is the latest and potentially most devastating of Moscow's efforts to block the construction of Nabucco. Putin has taken this anti-Nabucco campaign very seriously, personally visiting his counterparts in countries along the proposed route. Gazprom has already proposed the construction of a pipeline branching off of Blue Stream or maybe South Stream and terminating in Hungary. Gazprom's lobbying tactics with Hungary are decisive, robust, and unified—everything that the EU's tactics are not. The planned Nabucco pipeline would terminate in Austria, leaving Hungary as a mere transit country. By siding with Russia, however, Hungary, not Austria, would be a new energy hub of central Europe. Incidentally, Hungary receives 77 percent of its gas imports and 97 percent of its oil imports from Russia. Because Hungary's support is critical for Nabucco, a lack of cohesion in the EU could potentially sink another much-needed pipeline.

TGI and Nabucco will only make commercial sense if Central Asian gas is available in a reasonable time frame. That is why Putin negotiated a series of energy agreements with Kazakhstan, Turkmenistan, and Uzbekistan in May 2007. Together, the three Central Asian states signaled their willingness to enhance cooperation with Russia in the energy sphere, agreeing to the construction of a new Russia-bound gas export pipeline along the eastern shore of the Caspian Sea while upgrading and expanding existing pipelines. They also consented to further Russian development of Central Asian fields and new long-term supply contracts.

Although official documents finalizing these arrangements will not be signed until September 2007, these agreements represent a serious blow to Western interests. The EU and the United States have long desired the construction of a Trans-Caspian Gas Pipeline (TCGP) to carry Central Asian gas directly to Europe, but it would be difficult to justify the construction of such a pipeline if the bulk of that gas is already committed to flow through Russian lines.⁷⁵

⁷⁵ www.ceps.eu

The May and June agreements should be a wakeup call to the EU that its plans to create a southern corridor for Caspian and Central Asian energy supplies are in serious danger. Although the EU appointed a special representative for Central Asia in 2005, the mandate for that position did not include energy until March 2007 when Germany, which held the EU presidency in the first half of 2007, started leading the charge to enhance EU ties with the region. Portugal, the current EU presidency holder, should intensify these efforts. Such an engagement would first and foremost mean a clear and unified European determination to make the southern gas corridor work.

The successful construction of pipelines such as Nabucco requires a much more cohesive approach from the EU.

Europe's disunity and hesitancy are its biggest weaknesses. Russia, on the other hand, is able to offer decisiveness and concrete promises. Indeed, Prime Minister of Hungary implicitly stated that this was a main advantage Russia holds over the EU. When Hungary announced its support for the Blue Stream extension at the expense of Nabucco, he stated that the EU-backed project was nothing but a "dream" and that "Blue Stream is backed by a very strong will and a very strong organizational power. Clearly, the EU cannot ever hope to be as "strongly organized" as the semi democratic Russia, nor should it. A more formal framework, however, should be established to streamline EU policies on energy.

Several European leaders, most prominently EU energy commissioner Andris Piebalgs, have supported such a position. Unfortunately, formalizing a common European energy policy is quite difficult. Member states are far more reluctant to cede sovereignty to Brussels on energy policy than they are on trade tariffs or visa regulations. Moreover, each state has different priorities. At the very least, however, they must realize that working together on issues of energy security, especially when dealing with Russia, will be mutually beneficial in the long term.

This commitment would represent much-needed political support for the states of the Caspian Sea region. After all, before leaders such as Turkmenistan's Gurbanguly leader will commit to a project like the TCGP, involvement in which would draw the ire of Russia, they must have a firm and steady political commitment from the entire EU.

Similarly, energy companies such as Eni, Royal Dutch Shell, or BP need to see meaningful engagement between Central Asia and the EU before they will pour billions of dollars into the construction of trans-Caspian routes. If the EU or the G-8 will not compete with Russia over access to Central Asian gas. Time is a very important factor here. More delay will

only give Gazprom the opportunity to preempt the EU's trans-Caspian pipeline plans. The significance of such commitment is tremendous: the BTC and SCP pipelines would never have been built without the strong support of the United States.

It is absolutely vital that the EU diversify its energy sources, not just its energy supply routes. The construction of Nord Stream, the Blue Stream extension into Hungary, or the South Stream does little to enhance the energy security of the EU because the gas is still controlled by the same source. Yet, if additional non-Russian-controlled pipelines from Central Asia and the Caucasus are built, Russia will lose its monopoly power there. If regional exporters and European consumers have greater choice, Moscow will be forced to offer fairer terms.

As long as Russia maintains its dominance over the pipelines linking Caspian and Central Asian energy producers to Europe, it will not reform. The ties between the Kremlin and energy companies have enriched those in power, enabling them to chip away at democracy, rule of law, and human rights in Russia. Billions of dollars in energy revenue have allowed the state to buy up previously independent media outlets through Gazprom's media division. Reform of the energy sector thus is crucial to any broader reforms in Russia. Even before the pipelines are constructed, the EU should work to channel Russia toward more transparent and market-based behavior. Europe possesses the necessary legislation to prosecute businesses such as Gazprom or Transneft, the state-owned Russian oil pipeline company, for their monopoly power. The prohibited actions in *Article 82 of the European Community Treaty* read like Gazprom's business strategy in Europe. Among other things, *Article 82* prohibits "abuse ... of a dominant position within the common market," "imposing ... unfair trading conditions," and "making the conclusion of contracts subject to acceptance ... of supplementary obligations which ... have no connection with the subject of such contracts."⁷⁶

The EU has already used this antitrust provision to prosecute Microsoft and block a proposed merger between General Electric and Honeywell. It should use this power against Gazprom and Transneft, especially considering that they are the monopoly oil and gas providers in some EU countries.

For more safety, EU should demand more transparency of companies such as Gazprom and its subsidiary, RosUkrEnergo, which is the intermediary for the sale of natural gas between Gazprom and Ukraine. There are a number of allegations over corruption and criminal links, both resulting in huge financial losses for Ukraine. Given that 80 percent of Europe's natural gas supply from Russia flows through Ukraine and RosUkrEnergo, billions of dollars are

⁷⁶ European Community Treaty

potentially being mismanaged or laundered. Furthermore, by receiving gas supplies from RosUkrEnergo, the EU is effectively a participant in a multibillion-dollar money-laundering scheme.

Antitrust lawsuits against monopolies such as Gazprom, particularly when coupled with establishing competitive pipeline routes, will go a long way toward breaking Russia's hold. Yet, there are several other things the EU should do to push Moscow toward more cooperative, mutually beneficial behavior. As Brussels has essentially abandoned its attempt to persuade Moscow to ratify the Energy Charter Treaty and join the Transit Protocol to open up its pipelines for third-party access, which is seen as a huge weakness on the part of the West, efforts should now focus on establishing direct, diversified transport routes to access Caspian gas. Second, the EU should demand an independent investigation of any pipeline cutoffs, such as the one to Lithuania. This would back up the EU's off-stated declaration that it is against the deliberate manipulation of energy supplies for political purposes.

Fig. 14 – Oil Pipelines⁷⁷



⁷⁷ www.eurasianet.org

3.5. Natural Gas in the Context of Russia's Energy System

This chapter examines Russia's natural gas consumption in the context of stationary energy use, particularly the close linkage between electricity and heat supply. This interdependence will largely determine the prospect of domestic demand and will restrict the extent of adjustment. The author also investigates the constraints on gas production, exports, and imports.

In Russia, as elsewhere, energy is used not in an abstract fashion but in concrete geographic space and, except in mobile machines, in a locationally concentrated manner. It is also consumed in a concrete world of existing equipment and specific technological applications. Energy production is similarly specific and particular, both in its various primary forms (raw fuels and hydro- and nuclear power) and in its location. However, the different primary forms in which energy is produced are not uniformly transportable nor uniformly applicable, efficient, or environmentally acceptable in the diverse technological processes. Energy demand, and the transport-delivery infrastructure to satisfy it, is, therefore, subject to pronounced inertia. The ghost of geography, which burdened the Soviet energy system in its last decade, also haunts that system in Russia today. In the 1980s, 65-70 percent of all fuels used in the European regions (the Urals included) of the USSR had to be shipped from Siberia and Central Asia. In today's Russia, also with three-fourths of the population in its European parts and the Urals, the share is significantly larger.

The enormous spatial discrepancy between consumption and production that characterized the energy complex of the late Soviet era, specifically the oil and gas sector, remains. Indeed, its significance has increased because a much larger share of oil and gas output is exported today, and these exports account for a greater portion of Russia's economy than ever before. Roughly one-half of the oil and one-third of the natural gas were exported in recent years, overwhelmingly through Black Sea and Baltic ports and pipelines to Europe. The sharp rise in prices and the increased volumes, at least until the middle of the present decade, lifted the contribution of energy exports (nearly all of it oil and gas) to approximately 23 percent of Russia's GDP in the first seven months of 2006.

To plug the huge domestic deficit in European Russia and fill export pipelines and tankers, Moscow still depends on its West Siberian province and a pipeline system largely developed in Soviet times. Russian oil companies did increase production, construct and

expand tanker terminal capacity, and build a few hundred kilometers of pipeline. The anemic growth in the gas sector, however, is due entirely to independent producers who work on small fields and to oil companies, both of which extract mostly fat gas—that is, gas high in heavier hydrocarbon molecules that need to be removed before interregional pipeline transport. Gazprom, the Russian gas monopoly, continues to live off its Soviet inheritance. Although Gazprom's reserves have grown, much less has been done to access and prepare them for production and tap them with new pipelines.

Geographic and structural rigidities in the consumption pattern will therefore circumscribe the scope of change, possibly for a generation. The population and settlement structure on the one hand and the sectoral-technological structure of consumption on the other set severe limits on feasible shifts. Within these limits, adjustments, conservation, and substitution in a market economy will proceed to the extent that price signals convey correct information. Political exigencies, however, circumscribe such adjustments everywhere, at least in the short term. This is doubly true in Russia, still a very distorted market economy, in which the oil and gas sector fueled the recent boom in personal consumption and which faces momentous parliamentary and presidential elections in 2007 and 2008.

This chapter focuses on natural gas, but in the context of boiler and furnace fuel use as a whole, particularly electric power generation. In 2005, Russia's aggregate fuel-energy consumption (including primary electricity—that is, hydro, nuclear, and geothermal power) amounted to 29.5 quads or 7,423,500 million kilocalories, roughly 30 percent of the U.S. total. Boiler and furnace use plus primary electricity are essentially equivalent to stationary consumption and in that year composed 76 percent of Russia's aggregate energy demand.

This chapter first analyzes the consumption sphere, especially the electric power, household, and municipal sectors, which, when combined, accounted for some two-thirds of natural gas used domestically in 2005. In the next ten to fifteen years these sectors will be the most technologically constrained to alter demand. In particular, the intertwining of the natural gas and electricity industries is a special feature of the Russian energy system. This symbiosis is critically important for the prospect of gas supply, energy conservation in stationary uses, social and environmental issues, and regional equity. This intertwining relationship cannot be altered significantly within the stated period. Equally important in the next ten years, the electric power sector and the household consumer are least likely to be fully exposed to the shock of price signals, but at the same time would not be entirely capable of responding to

them. Following this section I examine constraints on natural gas supply to the Russian economy, a subject drawing extensive media coverage recently.

In recent decades, the transformation of mineral fuels into electricity, high-temperature heat, and steam has been the most striking technological trend in stationary use of energy the world over. Direct combustion of fuels in end-use installations has declined while shares of precisely controllable electricity in industrial furnaces and electrochemical processes have sharply increased. This trend, together with the rising global supply of natural gas-which burns more cleanly and with higher efficiency in end-use equipment-more than compensated for thermodynamic losses associated with converting fuels to electric power. In addition, natural gas contributes to the economy both as fuel and as feedstock for a range of chemical products, being essentially the only feedstock for ammonia, the base for nitrogenous fertilizers, methanol, and similar products. It creates higher value-added as feedstock than as fuel, and as fuel it produces far greater economic and environmental benefit for households and municipal use than in industry.

In Russia today the contribution of natural gas in the aggregate fuel mix and, in particular, power generation is much larger than in most countries. The gas and power industries have their problems and prospects crucially intertwined to a far greater extent than elsewhere. Yet these two industries are joined, like Siamese twins, in an uneasy relationship by colossal supply-demand linkages that are critical for the economy and society. This also means that shifts in subsidies, price changes, and the implementation of investment strategies in one of these industries will ripple through the other-but to different degrees and at different rates across Russia's vast geographic space.

Natural gas and electric power industries have much in common. For both energy forms, a robust, interconnected system increases stability, reliability, and, all things being equal, reduces unit cost. For electric power supply, such systemwide operation also reduces the share of reserve capacity, essential given the no storability of electricity, which must contend with fluctuating demand. On the consumption side, the difficulty of switching suppliers has long made these industries natural monopolies, which deregulation has only recently been trying to eliminate and with only qualified success. In addition, gas and electricity each represent both intermediate and final demand in an economy, with varying opportunity costs between the two and within the intermediate sector.

In Russia, however, the two industries share not only these similarities, but their problems are also so intertwined that no resolution is feasible in isolation. In both industries,

the longer outlook requires technological remedies along the whole chain from supplier to consumer. For the short and medium terms, price increases and reforms must be faced. The latter, however, will introduce critical tensions between the two industries that will impact the coherence of the whole system. Price increases will not, and almost certainly cannot, be uniform either for the wide range of intermediate users or the final consumer. Institutional and enterprise trade-offs will be the subject of bargaining and direct and indirect pressures. Russian industry's competitiveness is strongly tied to the level of energy prices, particularly those for gas and electricity. With 3,000 m³ of gas consumed per \$1 of GDP produced, Russia's economy has perhaps the highest gas intensity in the world today. This, however, is largely due to wasteful use and the depressed share of high-value products in Russia's GDP. Gazprom has acquired partial ownership of industries in the metallurgical, chemical, and petrochemical sectors and in regional power systems-the partial acquisition of Mosenergo being the most important. All these will militate against the uniform treatment of consumers with respect to price reforms. Finally, the prospect of the gas and power sectors and the evolution of their relationship ultimately rest on decisions made or not made today and in the recent past. Inertia is built into both sectors because both are extremely capital intensive, with long lead times for project development.⁷⁸

In 2003, more than a quarter (approximately 26.5 percent) of all fuel that Russia consumed in stationary equipment on a heat value basis was supplied to electric power plants. Three features of that system constrain Russia's energy prospects: a) the low conversion efficiency of the country's power stations (only 36 percent), with only a small, declining fraction of the waste offset by economies of cogeneration; b) the high share of natural gas in thermal stations in general, and c) its geographic pattern. Thermal power plants consume far more gas than any other fuel, of course, making the low conversion efficiency doubly poignant because gas represents a highly effective heat source. In Russia as a whole, gas composed more than 70 percent of the fuel mix of thermal stations, and gas produced approximately 48 percent of all power in 2005. The share of all electricity generated by gas, however, rises to 80 percent in European Russia, where three-fourths of the population lives.

Until recently, the thermodynamic efficiency of power plants burning natural gas could not be much higher than those of the most advanced coal-fired ones. Combined-cycle technology has changed that. Today, up to 58 percent conversion efficiencies can be achieved,

⁷⁸ Willenborg, R., C. Tönjes and W. Perlot, *Europe's Oil Defenses. An Analysis of Europe's Oil Supply Vulnerability and Its Emergency Oil Stockholding Systems*, The Clingendael Institute, The Hague, 2004

some 20 percent better than those in modern coal-burning power plants. Most power units put on line in the United States and Western Europe in the 1990s and the early years of this decade were combined-cycle units. (Recent pessimism on reserves and price escalation will most likely restrain the growth of gas-burning power generation in the United States and Europe once those under construction are put on line.) In Russia, however, even gas fired plants reach a mere 38 percent efficiency. Shifting all such stations to combined-cycle technology would save as much as 30 billion m³, or 27 percent of all gas that electricity generation consumed in 2005. While reconstruction is capital intensive and takes time, such investment should be greatly accelerated. Yet United Energy System (UES) plans for no more than half such stations to work on combined-cycle, even by 2015.

Fuel substitution for gas is a more complex issue. It is also more economically and ecologically questionable. Fuel oil (mazut) can be readily used in most power plants, but until the gas price is completely deregulated it will cost far more. Economic rationality also calls for the gradual increase in the depth of oil refining (hence a reduced share of mazut), while the probable peaking of oil output hardly makes this a viable choice. This leaves substitution by coal-fired and nuclear power generation as an option, both of which fall far short of providing a solution in the next fifteen or more years. Presently, only twenty powers stations, all in European Russia and originally planned for coal, could reconvert back to that fuel at a reasonable cost. Switching back would allegedly free 27 billion m³ of natural gas but would demand the mining and delivery of some 40 million tons of extra coal. UES's plan to raise coal use within four years by almost as much (from 121 million tons to 159 million in 2010) is unrealistic. Only the Kuzbas could provide such quantity after considerable lead time and investment, and current railways capacity cannot handle that extra freight. In the longer term, however, such expansion for coal-fired power plants should be realized. Gazprom already owns more than one-tenth of UES's shares, which are expected to be used for the expansion of coal-fired capacity in West and East Siberia. Recently, Gazprom acquired a controlling share in the Siberian coal company SUEK, which produces three-tenths of Russia's steam coal and also owns shares in large local power plants.

Unlike much of the world, however, Russia cannot make coal the mainstay of its power generation even in two or three decades. In most of the developed world, and in China and India, coal is the dominant fuel in power generation, reaching from 75 to 80 percent in the United States, Australia, China, and India and more than 90 percent in South Africa and Poland. In all these countries, however, large accessible coal fields lie either fairly close to

major consuming centers or near deep-water ports that can import the fuel cheaply by huge ocean-going colliers. (And one should not ignore the staggering health and environmental cost of coal in these countries, especially China.) Kuzbas coal, deep in Siberia, lies 2000 km east of the Urals and 2,800-3,500 km east of the major cities along the Volga river. With surplus hydropower just to the east, there is no regional power deficit. Despite serious pollution, the construction of modern coal-fired power stations and transmitting electricity to the Urals and European Russia could still make sense if the technical and economic problems of extra high voltage (EHV) transmission over such distances are solved. The Soviet regime worked on these tasks for many years and they have been pursued in North America as well. Yet nowhere in the world has EHV transmission been able to conquer such distances.

UES management seems intent to continue with a gas-generating strategy west of the Urals, but realizes that maintaining previous growth rates for gas is impossible. Coal's contribution to electric power generation is envisaged to increase from 27 percent at the end of 2006 to 37 percent by 2016, with a corresponding decrease in the share of gas. However, specialists doubt that financial resources and physical inputs for such substitution can be marshaled within a decade. Most of the increase in coal's contribution, if such plans materialize, should occur east of the Volga River, while gas would have to continue its overwhelming dominance in thermal stations west of that river.

The upsurge in prices is underway, but existing consumers will be provided protection and suffer only fairly modest hikes for the rest of this decade. Prices for new incremental users, however, are unregulated and by 2010 all industrial gas consumers should pay more than \$100 per 1000 m³ (compared with \$44 in 2006). As for electricity, the average industrial consumer in October 2006 was still charged only the equivalent of 3.5 cents per kWh (90.84 kopeks), and the urban population half again that much. Similarly, with natural gas, it will take until 2011 before a step-by-step increase in the share of unregulated prices will encompass the entire power market. According to UES, tariff increases for electric power have so far proven insufficient to balance the rising price of gas, and profits for the power monopoly in 2005 were down 43 percent. Gazprom aims to command a number of wholesale generating companies for the acknowledged purpose of "optimization" in that sector. By a new agreement it will also control three-tenths of Russia's coal output, overwhelmingly in Siberia and the Far East. Given that electricity use is far easier to meter than the use of heat, inelasticity in power consumption may compensate with higher revenues.

In a recent forum, the changes anticipated on the domestic gas and electric power market generated anxiety and controversy among Russian experts. In fact, the argument is not unlike that which has raged about deregulation in the West and has no doubt been influenced by the Enron debacle. On the one hand, rising and, in five years, fully unregulated prices could spur modernization, investment in conservation, expanding supplies from independent producers and heightened interests even by Gazprom in the domestic market. Others, on the other hand, point to the risk of price liberalization under conditions of virtual monopoly. Competitive markets evolve only in a situation of surplus; yet, for a number of years at least, constraints on supplies are far more likely, especially with new restrictions on foreign capital and Gazprom's continued control of pipeline access. Independent producers, still with only one-tenth of aggregate extraction, may be far more dynamic but confront great risks from surging transport fees, which they cannot influence. Energy-intensive consumers (steel and heavy chemicals, among others) fear for their exports because of the expected hikes in gas prices, at least in the near term. Investment in modernization and energy saving to improve competitiveness will need to be substantial but will yield dividends only later. Sheltering industry through tax cuts and subsidies, on the other hand, will unavoidably shift the burden, directly and through inflation, to the population at large.

For the power sector, by far the largest and most wasteful gas consumer, the critical window for radical reforms and liberalization seems to have closed. Because obsolescence in that sector reached 60 percent by 2005, it now ranks as one of the most dangerous of all industries.⁷⁹ Given that perilous state and the present wave of centralization, the essential need today is to secure sufficient state investment for modernization in the hope of re-launching reforms later. If the sector stagnates, starved of capital, improvement will be even less likely. It also seems that conflict and subsequent coordination between the gas and power monopolies are unavoidable. A long-term compact, according to which Gazprom would supply fuel to the power monopoly until the end of this decade, is reportedly under negotiation, with the basic principles of an agreement already set up. However, as of the end of June 2007, such an accord has not been reached.

Efficiency improvements in the heat supply and distribution are especially urgent. In 2000-2001, UES, the electric power monopoly, overwhelmingly provided the largest, if declining, share of heat to the urban economy not used for industrial purposes from gas-fueled

⁷⁹ Yergin, D., "Crisis in the Pipeline", *The Wall Street Journal*, 10 August, 2006

power plants and boilers. Market strategies, however, will find such a technologically interconnected system particularly difficult to tackle. At the beginning of this decade, less than one-tenth of the apartments were equipped with meters and regulation devices, while residential and public buildings accounted for two-thirds of all heat loss. Since the early 1990's, wealthier customers have been switching off district heating, leaving the system with decreasing economies and severe payment collection problems. And given the increasing insolvency of district heating systems losing their more affluent customers, it remains a huge burden for state and municipal authorities, with minimal attraction for the private sector or foreign capital. This, of course, means that in smaller cities with fairly low heat loads, putative savings from monitoring may never cover the installation, maintenance, and service cost of metering devices and activities. And by extension, this will apply to larger cities, too, once enough customers opt out of central heating in their districts. Very little research has been done about consumer behavior concerning heat consumption and tariffs. It is safe to say, however, that monitoring and, as far as possible, optimizing steam and hot water distribution through tens of thousands of multistory Soviet-era buildings will take years, costing many billions, as it did in former East Germany. Such technologies, however, are available and well proven elsewhere and should be vigorously pursued both through institutional coordination and price incentives. Electricity conservation through more efficient lighting can be accomplished far more quickly and easily, but can save only a small portion of energy wasted.

Rising gas prices have also affected other industries already, particularly the chemical and metal industries, each accounting for approximately 7 percent of Gazprom's domestic deliveries (some 43 billion m³ combined). In the former, the cost of gas composes 40-80 percent of total cost today; in the latter, 8-14 percent. A large segment of the chemical industry will clearly suffer. Almost two-fifths of ammonia production in Russia was under Gazprom's control in the early part of this decade, ensuring finances for modernization and uninterrupted gas deliveries.

The Russian gas industry is at a critical junction. Before domestic and export prices at the border equalize, with due incorporation of transport costs, conflict between demand priorities is inevitable. Until 2020, Gazprom allegedly has contracts for exporting a cumulative volume of 2.2 (according to another source, 2.5) trillion m³ worth more than \$250 billion. Long-term export contracts are for certain to be extended, according to the minister of Industry and Energy. At the same time, rapid GDP growth and the rising income of the urban population resulted in increasing domestic demand for both electricity and gas, and constraints on energy

supplies will impede economic growth, according to experts. The five years from 2000 through 2004 saw Russian gas consumption increase 18 percent (a 2.8 percent annual growth), and a gas demand-GDP elasticity of 0.7 percent. By 2010, with current trends holding, Russia may not fulfill even the current gas contracts in their entirety, and much larger deficits could follow. Domestic shortages would curtail the expansion of GDP below 5 percent. Other sources see an even greater imbalance, with the specter already on Russia's doorstep.

With all gas prices free to float by 2011, Gazprom, in theory, should be indifferent as to whether it sells abroad or domestically, once transport costs are accounted for. In reality, however, the export market will still carry extra benefits absent on the domestic one, even in the purely economic sphere. As Milov notes, Gazprom can immediately securitize its long-term contracts and the income expected from them, underpinning loans and guaranteeing the monopoly's financial system. This is extremely attractive and may never exist domestically. As noted, the giant German and French importers have already extended their contracts until 2030 and Italy's Eni until 2035. At any rate, the home market is a captive one for Gazprom. It can trade *above limit* gas at much higher prices at whatever the domestic consumers can bear. Only two-thirds of all gas for UES was to be within such price limits by the fall of 2006, but Gazprom would not release even the more expensive balance to electric power stations. And the monopoly can, and allegedly does, manipulate prices even on the gas exchange by tinkering with the volume it is willing to transport for independent producers.

A number of recent studies by European and Russian research institutes, the International Energy Agency (IEA), and UBS AG, Europe's second-largest bank, all foreshadow a future shortfall. According to the IEA, as early as 2015, nearly 200 billion m³ of extra gas will be needed from newly developed deposits, assuming no additional Central Asian imports. 2010-20 will see output declines in old reserves almost evenly matching demand for new gas in yet-to-be-opened fields within Gazprom's domain. Jonathan Stern computed similar declines for 2004-2020, showing accelerating decreases for most major deposits. We also know that water incursion, and consequent loss of producible reserves, has become a serious problem, leading to the loss of 15-20 percent of extractable reserves throughout Russia. In the critical fields of Northwest Siberia, such loss amounts to five years of cumulative extraction at the current level. The IEA lists a range of uncertainties, such as timely investment in extraction at new fields and in transportation and distribution efficiency, the likely contribution by independent producers, and the volume of available Central Asian gas. Most of these would have to be positively resolved to avoid a shortfall.

Two additional issues add to the uncertainties of estimating the current volume of domestic consumption and, still more, projecting Russian gas demand. One is the internal use of gas (mostly at oil fields) produced but not sold, escaping reliable statistics about consumption. For example, in 2005 non-Gazprom producers extracted 94 billion m³ of gas (49 billion of them by oil companies) but sold 20 billion m³ less. The second is the existence of four unconnected nodes in East Siberia and the Far East. They are minor markets with major but very difficult reserves nearby, such as the Sakhalin-1 and 2 offshore deposits and the giant Kovykta gas field, until this year in majority foreign ownership. The Kremlin's political objectives via Gazprom clearly will determine future extraction in these regions, an issue briefly discussed later. It seems most of the difference in various estimates of Russia's aggregate gas consumption in the middle of the present decade, ranging from 400 billion m³ to 445 billion m³, can be attributed to these uncertainties.

By 2005, the balance of domestic gas demand and supply availability in Russia was already very tight. The rapid economic expansion of the decade has stoked increases in Russia's gas consumption. As noted, consumption grew at an annual rate of 2.8 percent from January 2000 through 2004, and then jumped still more in the harsh winter of 2005-2006. In 2005, Gazprom sold 307 billion m³ to Russian consumers while independent gas producers and oil companies sold 74 billion m³. If we add the 206 billion exported to all markets and Stern's 2004 figure of 52 billion for pipeline losses and compressor-station use, the numbers add up to match Russia's aggregate production of 640 billion m³ in 2005. Such growth in domestic demand cannot be maintained, and it is surprising that the monopoly would undertake an ambitious regional and rural gasification program this decade. That program is to expand the distribution network to reach 62 percent of the population as opposed to the present 54 percent. With close to \$1 billion already spent and almost as much earmarked for 2007, seven million citizens in fifty-three regions are affected. No economic justification can be given for that project, which, however, illustrates Gazprom's social and political role and its fusion with Russia's "commanding heights." After all, 2007 and 2008 are election years.

Domestic demand jumped 17 billion m³ between January 2004 and December 2005, then by as much as 27 billion during 2006 according to BP's latest Statistical Review of World Energy. Such growth would raise domestic consumption to nearly 500 billion m³ by the end of this decade and much more afterward, if pipeline use and losses are included. Exports, which beyond the CIS remain a priority for Gazprom and critical for Europe, would come on top of that. Although such increases in domestic demand cannot be maintained, Industry and Energy

Minister predicts that a volume of aggregate consumption reaching 470 billion m³ by 2010 and 495 billion five years later "will be satisfied in full."⁸⁰

Oil companies have their own interests, with gas output and utilization mostly subordinated to their plans to extract the far more transportable liquids. Increasingly, tight electricity supplies and transmission bottlenecks have forced petroleum producers to generate much of their own power from associated (oil well) gases. (Massive outages during the harsh winter of 2005-2006 resulted in the shutdown of many wells in West Siberia). Surgutneftegas already produces a quarter of its electricity in-house, with Lukoil and TNK-BP producing smaller shares. Interim construction of small and midsize generating capacity is underway throughout Tyumen Oblast and the Urals region. Gas flaring, as elsewhere in the world, clearly wastes a huge part of this resource, in addition to contributing significantly to the emission of greenhouse gases. Russia qualifies for carbon finance through the Kyoto mechanism, in addition to the market value of flared gas. However, relatively low flow rates, distances to major consumption centers, and the uncertainty of future tolling fees by Gazprom act as disincentives to major investment by oil firms to reduce that wastage. More associated gas will no doubt be consumed as in-house power-station fuel by oil companies, given the persistent electricity shortage. This could ease the pressure on natural gas for electricity generation, but only in certain regions. At the same time, the aging of existing oil fields and the unrelenting growth of power demand on the arctic and Siberian resource frontier will counteract such economies.

Gazprom's latest document projects \$343-\$420 billion in investment needs by 2030. Yet for 2007 the monopoly actually lowered previously planned increases in its capital outlays, given its recent expensive purchases (Sakhalin Energy, Beltransgas, Mosenergo), heavy debt burden, and last winter's reduced revenues because of the uncommonly warm weather. Yet the warm weather cannot explain the officially given 11 billion m³ (23.5 percent) export cutback to Europe and its worth of \$2.6 billion in the first quarter of 2007. Gazprom is silent on the matter, but the "take or pay" contracts imply that importers have already paid and would not have abandoned such a volume. Instead, they would be injecting it into underground storage, if they have not already done so. Regardless of what explains last winter's discrepancy, all evidence points to strained supplies in the forthcoming years. In fact, before he was fired (resigned) over another internal issue, Gazprom's former deputy head openly conceded that the

⁸⁰ Youngs, R., *Europe's External Energy Policy: Between Geopolitics*, Annual Review 2007

monopoly cannot meet export and domestic demands simultaneously, as supplies from the Yamal Peninsula will not reach consumers until 2012-13 at the earliest.

More recently, complete uncertainty has crept into official pronouncements. Gazprom's deputy chairman, Alexander Ananenko, declared that the monopoly by 2020 may produce not the planned 590 billion m³, but as much as 670 billion m³. Still wilder claims by the governor of Yamal District about the region's output reaching 730 billion m³ by that same date (2020) must be dismissed as pure chimera. Given the depletion rate of current fields, such a volume would demand at least 250 billion m³ of new capacity, with respective transport expansion, more than half of it on the Yamal Peninsula itself. Another hint of the indeterminacy of Gazprom's long-term plans is surmised from a reference to its latest document, "General Scheme of Development," which allegedly examines eighteen scenarios until 2030. But equal ambiguity characterizes the monopoly's plans for the near term.

As with extraction, Gazprom has not prepared for the rising need. Through 2000-6, it targeted less than one-tenth of its capital outlays for increasing pipeline capacity and most of it went to expand exports near Russia's western borders. It has neglected the development of smaller deposits south of the Yamal Peninsula.

From 2000-2006, it invested one-fifth of its aggregate outlays into developing new production. In the same period it has spent more on acquisitions and non-gas-related business than on developing new reserves, and so far in 2007 it continues with such investment policy. It has also limited the use of its facilities by independent producers. On the other hand, the postponement of the Yamal Peninsula itself for more than a decade was, on the whole, justified, given the enormous difficulties, capital requirement, and long lead time. It is doubtful that gas from the peninsula could have yielded profit even at prices expected in 2010.

Beyond the latter part of the 2010 decade, only one thing is clear. The accelerating decline of Gazprom's super giant fields near the Ob estuary means that new supplies from the Yamal Peninsula, when they arrive, will merely compensate for depletion. Also, without that gas, Russia can only fill half of the Baltic undersea pipeline capacity. Construction startup on the seabed of this highly controversial pipeline has been postponed, most likely until 2009, for environmental reasons and inadequate information provided to the affected states, shortages of steel pipes, and financial delays. Studies and negotiations are underway concerning significant changes on four sections on the sea floor. Even the overland section on Russian soil is behind schedule. In this light, speculations about the underlying reasons for Gazprom's changed plans for the colossal Shtokman offshore field from liquefaction to eventual pipeline shipment on

the mainland may also have some credibility. If in the next fifteen to twenty years the reserves available to satisfy both domestic and export demands are indeed constrained, assigning all of Shtokman's production to the pipeline for Western Europe in its first two stages is plausible. Gazprom's deputy head asserts that Shtokman will be open by 2013, with the first volume flowing into pipes a year later, to the doubts of most experts. Frederic Hauge, chief of Norway's Bellona Foundation, believes the field will not be on line before 2035.

More recently, complete uncertainty has crept into official pronouncements. Gazprom's deputy chairman, Alexander Ananikov, declared that the monopoly by 2020 may produce not the planned 590 billion m³, but as much as 670 billion m³. (So it also "may not"? asks a reporter sarcastically.) Still wilder claims by the governor of Yamal District about the region's output reaching 730 billion m³ by that same date (2020) must be dismissed as pure chimera. Given the depletion rate of current fields, such a volume would demand at least 250 billion m³ of new capacity, with respective transport expansion, more than half of it on the Yamal Peninsula itself. Another hint of the indeterminacy of Gazprom's long-term plans is surmised from a reference to its latest document, "General Scheme of Development," which allegedly examines eighteen scenarios until 2030. But equal ambiguity characterizes the monopoly's plans for the near term.

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In the last two decades of the Soviet era, European Russia and Ukraine, and other western republics, became heavily dependent on massive oil and gas flows from Tyumen Oblast (northwest Siberia) and from Central Asia. Given the more forbidding location of gas reserves and much greater transport constraints on this fuel than on oil, the Tyumen gas deposits were tapped a decade later than the region's oil fields. Each year, through most of the 1970s, Uzbek and Turkmen fields piped more gas to the Urals and European regions of the USSR than did the fields of Siberia. They remained critical suppliers until the end of the Soviet era. The disintegration of the Soviet Union and the collapse of much of its military-industrial complex and energy-intensive industries created a gas bubble. In the first post-Soviet decade, therefore, Russia had no need for Central Asian gas. Gazprom blocked Turkmen gas exports to the European market, directing the flows exclusively to Ukraine and the Caucasus. The gas surplus enabled the Kremlin to foil attempts by Turkmen dictator Saparmurat Niyazov to raise prices and easily weather his drastic cuts in supplies for several years.

All this changed in the present decade. The resurgent and highly energy-intensive Russian economy, growing consumer demand, and increased exports all combined to swiftly augment the need for more gas. Because reserves in Siberian deposits were not being replaced, Central Asian gas rapidly assumed critical importance for the Kremlin. So did more complex reserves in Kazakhstan. At their tripartite summit on May 12, 2007, Putin signed a "framework agreement" with Turkmenistan's new president and with Uzbek President Islam Karimov. They concurred that Russia would restore and enlarge the worn-out Central Asia-European Russia trunk line system plus a smaller pipeline along the Caspian shore, which would be further expanded much later. By 2010, the system would transmit a full 100 billion m³, with another

20 billion m³ transmission capacity added in the second half of the 2010. A framework agreement, however, is not a formal contract. Recent reports indicate serious difficulties ahead, with no guarantee that such a treaty will be signed in September 2007 as intended, although the contract for current deliveries will expire at the end of 2009. Whatever the outcome of these negotiations, it is doubtful Moscow can count on 100 billion m³ from Turkmenistan. No independent outside confirmation exists today about the size and condition of that country's gas reserves, nor of the technical state of the Turkmen gas industry. Mystery shrouds an allegedly massive, but complex, discovery at South Yolán, where China's CNPC holds drilling, but no production, rights. Ashgabat and Beijing continue negotiations, began by recently deceased president Niyazov, though the Chinese government is unlikely to agree to the \$100 per 1,000 m³ price that the Turkmen leadership seems to have in mind.

Moscow seems to find the new Turkmen president, Gurbanguly Berdymukhammedov, no easier to deal with than his predecessor. It is true that, for the forthcoming decade at least, and probably longer, Central Asian countries will find market diversification even more difficult than Russia. Their pipeline connections lead toward that country and through it to other former Soviet states. On the other hand, political control over the population is far greater than in Russia, and in the largest gas producer, Turkmenistan, the population is not only isolated but small. This should give the Turkmen government as much leverage over Moscow as the latter has over Ashgabat.

Until now, Gazprom was absent from East Siberia and the Far East. Gas reserves and the isolated pipelines were under company and regional ownerships. But this has changed. Gazprom forced its way to majority ownership in the huge Kovykta field (until this year, chiefly the property of TNK-BP) and the Sakhalin-2 integrated offshore oil-gas and liquefaction project, probably the largest of its kind in the world. And most recently, the Russian government and Gazprom are pushing to prevent ExxonMobil, a consortium leader for the Sakhalin-1 complex, from selling gas to China via a pipeline to the mainland across the Tatar Strait. Russia's gas monopoly wants that gas for Far Eastern consumers, whose need in the four southern regions exceeds 15 billion m³.

Gazprom's objectives and posture regarding the two Sakhalin projects may now be different. After gaining a majority (51 percent) share in the nearly completed Sakhalin-2 project, with its giant liquefaction plant, the monopoly will most likely focus on acquiring expertise in liquefied natural gas (LNG) technology and will not block further cooperation with its foreign partners. So far it has no experience with gas liquefaction and transport, which are

the fastest-growing aspects of the global gas industry. Gazprom appears keen to acquire expertise here for the future. Pipeline transport and supply are another matter. They have always been part of the monopoly's profile and means of exercising control. But they also have been a socioeconomic obligation and an economic burden. Even today, with rising domestic prices, Gazprom makes most of its profits on export sales, and the household market continues to be subsidized.

Transport and environmental constraints have played critical roles in energy development everywhere, but particularly in Russia. As the frontiers of fuel production expand into the high Arctic and East Siberia, this will be even more true. Such a move multiplies capital, technology demand, and the lead time for projects, making timely supply responses to demand increasingly difficult. This applies with particular force to natural gas, which is far more costly to transport than crude oil and is burdened with locked-in rigidities between fields and consuming centers that make supply diversification infeasible except over the long-term. The extensive, multifaceted transport infrastructure that ships West Siberian energy westward, particularly the giant gas trunk line system (but also oil pipelines and ports), has locked Russia and Europe into mutual dependency. Even regarding the largest importers, however, this interdependence is asymmetrical. Sudden disruptions can expose consumers to immediate vulnerability, which rebounds on the supplier, politically and economically, only with a time lag. Yet market diversification overall will be no less difficult for Moscow than supply diversification for Europe. It cannot happen for at least a decade.

In contrast to past disinterest, Gazprom has now elbowed itself into reserves and major projects in Russia's Pacific half. It is eager to move into Eastern markets, especially through the acquisition of LNG technology. This, however, is music for the more distant future. Presently, Duma and presidential elections loom and immediate political-social issues take precedent. The ongoing program of regional gasification and the expansion of the gas network to more settlements and neglected regions testify to that. Over the next decade or so, any notion of diverting any more than a tiny fraction of Russia's energy exports toward the Pacific Basin is a mirage.

Meanwhile, Gazprom's monopolistic control and its failure to prepare new supplies from smaller fields will result in a supply crunch in forthcoming years. On the other hand, neither the available technology nor prices until the end of this decade would have justified aggressive investment on the environmentally super fragile Yamal Peninsula, let alone Shtokman, the offshore giant in the Barents Sea. Nor are the necessary volumes of Central

Asian gas guaranteed in time, especially from Turkmenistan. The technical state of the gas industry and the pipeline system east of the Caspian is in poor shape and the full size of reserves has never been verified by outside observers. Recent pronouncements by Russian spokesmen concerning supplies, exports, and domestic demand suggest major uncertainties. At the same time, downstream within Russia structural rigidities of the consumption pattern will circumscribe the extent consumers can respond to price rises in the short term. As this chapter outlines, the intertwining of the gas and electric power industries in the European parts of the country has a particularly strong influence on stationary energy demand. Price increases in the two monopolies will have to be coordinated, increasing the economic and political impact. It seems also certain that higher prices and supply constraints will impact CIS consumers even more than those in Russia.

Chapter IV

4. The Importance of the Black Sea Region in the European Energy Security

Europe woke up suddenly again in 2009 to a massive Russian challenge to its energy security. The European Union is urgently needed to draft a policy regarding the energy supplies.

This chapter addresses the importance of the Black Sea in the European energy security. Black Sea region comprises three EU member states (Greece, Romania and Bulgaria), three large neighbors (Russia, Ukraine, and Turkey) and three South Caucasian states (Georgian Armenia, Azerbaijan) as well as Moldova.

The three energy supplies interruption made by Russia during the last three years highlight the Black Sea region's key role in the Western energy security.

The policy that EU has to develop must be based on the diversification of supply sources, with direct access via the Black Sea region to the eastern Caspian as a major objective and in the same time ensuring national or EU control of energy transport systems in Europe. A viable strategy for supply diversification should aim to link the EU with the transit and producer countries in the Black Sea and Caspian basins.

This chapter will clarify Western energy interests in this area as opening direct access to eastern Caspian supplies, not through Russian territory and ensuring that countries traditionally carrying Russian energy to Europe do not lose control of their transit systems to Gazprom or other Russian interests.

Energy security consists of a reliable supply of energy resources, at predictable prices, without vulnerability to the manipulations of monopoly providers. There are small chances that Europe will literally remain without energy resources, but considering the last events happened in Georgia, Ukraine, Lithuania and even in Belarus, there can be considerable financial and political costs to energy insecurity. In this regard, governments, regional intergovernmental organizations and private companies have all roles to play in promoting Black Sea region's contribution to European energy security.⁸¹

⁸¹ Tassinari, F. (2006) 'A synergy for Black Sea regional cooperation: guidelines for an EU initiative' *CEPS Policy Brief*, No.105, June.

The Black Sea region plays a critical role in the European energy security. Geographically located in close proximity to the world's greatest gas and oil reserves, the Black Sea region forms a natural energy bridge between the supplier countries and important consumer markets of the EU.

The current energy situation in the Black sea countries:

Georgia is already playing a major role in energy transit as a host country for the 1.0 million barrels per day (mb/d) Baku-Tbilisi-Ceyhan (BTC) oil pipeline and its natural gas twin, the 7 to 20 billion cubic meters per year (bcm/y) South Caucasus Pipeline (SCP). Both lines are terminating in Turkey. Georgia is also hosting the Baku-Supsa oil pipeline.

Bulgaria and Romania are both involved in existing gas transit south from Russia to Turkey as well as in proposals for gas supplies heading in the opposite direction from Turkey to the major European gas distribution center of Baumgarten in Austria.

Furthermore, they are looking in finding new Bosphorus bypass pipelines that would enable Russian and Caspian oil to reach European market without transiting the congested Turkish straits.

Ukraine occupies a unique position since it already possesses a pipeline, the Odessa-Brody line, which could be used either as a Bosphorus bypass or as a mean for enabling Russia to expand its own exports.

Turkey borders are the world's most energy rich regions in the Middle East and the Caspian Basin. The Baku-Tbilisi-Ceyhan (BTC) oil pipeline, the Baku-Tbilisi-Erzurum (BTE)⁸² natural gas pipeline, the Turkey-Greece-Italy Interconnector, the Nabucco project which will transport natural gas of various origins to Blue Stream Pipeline are some of the energy routes that demonstrates the important role of Turkey in the European energy security.

Russia, contrary to the other Black Sea littoral states, is both a supplier and transit country. Geographically, with the latest enlargement of the European Union, the world's largest gas supplier now shares common borders with the world's largest gas importer. Its triangular relationship with

Ukraine and Turkmenistan remains of crucial importance to the European energy security, as was demonstrated during the gas cut-off dispute at the beginning of 2006.

⁸² Starr, Frederick and Svante E. Cornell, Eds., *The Baku-Tbilisi-Ceyhan Pipeline: Oil Window to the West*, 2005 Central Asia-Caucasus Institute and Silk Road Studies Program, Johns Hopkins University-SAIS, Washington, D.C. and Uppsala University, Uppsala, 2005

Turkmenistan is in fact the largest supplier of gas to Ukraine, supplying up to three or four times the volume of gas supplied by Russia to Ukraine. Yet while Gazprom physically controls the entire Russian and non-Russian supply of gas crossing the border into Ukraine, it lacks physical control of the pipeline system within Ukraine. Russia has its own bounty of natural gas, but the country's gas monopoly, Gazprom, has preferred to distribute subsidized domestic gas internally while reselling Central Asian gas, mainly Turkmen to Europe at prices that are typically more than double what it is charged.

Energy security consists of a reliable supply of energy resources, at predictable prices, without vulnerability to the manipulations of monopoly providers. There is little chance that Europe will literally run short of energy resources, but—as we have seen recently in Georgia, Ukraine, Lithuania, and even Belarus—there can be considerable financial and political costs to energy insecurity. Governments, regional intergovernmental organizations, international lending organizations, and private companies all have roles to play in promoting the Black Sea region's contribution to European energy security.

The Caspian hydrocarbons are conveyed to European markets by a combination of pipeline, rail, and tanker.

Fig. 15 – Map of Black Sea Natural-Gas-Transit Routes



Geography, politics, and the economics of hydrocarbon transport compel European energy consumers to seek transit routes for Caspian oil and natural gas through and around the Black Sea.

In addition, Turkey's need for supply diversification leads it to procure natural gas from Russia, through the Black Sea, and Armenia's political situation has required it to receive Russian natural gas via Georgia.

The Black Sea region is, then, the hub connecting Europe, Russia, Central Asia, and the Middle East.

There are some concerns about the Bosphorus pipelines that are driving many of the recently and proposed alternatives, with all countries in the region. Georgia is the critical link in the BTC and BTE pipelines, which could not traverse the more geographically favorable route through Armenia, because of Armenia's political isolation from Azerbaijan and Turkey. Georgia also carries Russian natural gas south to Armenia (which it has continued to do even as Russia has cut off supplies to Georgia over political disputes). For now, BTE will principally supply Georgia (which is entitled to five percent of the flow in lieu of a tariff, and has rights to purchase a substantial quantity on favorable terms) and Turkey's domestic market.

Fig. 16 – The BTE and BTE (SCP) Pipelines



Bulgaria and Romania both carry gas south from Russia to Turkey, and will be involved in the Nabucco natural gas pipeline, which will connect with the Erzurum hub and terminate in

Austria, via Hungary. While filling Nabucco with Caspian (or Middle Eastern, or Egyptian) natural gas would reduce Europe's dependence on Russia, it is also spurring Russia to increase delivery to Europe by many means. Gazprom is seeking to put its natural gas into Nabucco itself, and is holding negotiations with some of the Nabucco partners to build a separate, roughly parallel pipeline to supply the same markets.

All three littoral countries are also planning competing oil pipelines to bypass the Bosphorus: Romania, through the northern Balkans to Trieste; Bulgaria, through Macedonia to Vlore, Albania; and Turkey, from Samsun to Ceyhan. Natural gas from Erzurum will also be able to reach Southern European markets, through the newly completed Turkey-Greece pipeline.

Ukraine already has a pipeline that could be used for transporting Caspian oil to European markets; the Odessa-Brody pipeline carries Russian crude *south* to the Black Sea for export through the Mediterranean, although it was originally built in 2002 with the intention of supplying Caspian oil to Poland.

The EU encouraged Ukraine to build the pipeline, in order to diversify its supply options and reduce its dependence on Russia. But a combination of Russian political pressure on the leaderships of Ukraine and Kazakhstan, and European reluctance to build the connections to Brody needed to supply European markets led Ukraine to fill the pipeline with Russian oil, headed south. With oil prices now at record highs and Europe becoming more concerned about Russian dominance of its energy supply, several agreements have been reached in the last year to extend Odessa-Brody to refineries in Poland and the Czech Republic.

The Blue Stream pipeline carries gas under the Black Sea, from Russia to Turkey. In addition to the conventional financial motivation, Blue Stream was intended to cement a comprehensive security and commercial relationship between the two countries. It also served the purpose of denying transit fees to Ukraine and Moldova, which are along the existing pipeline route (and which, Russia asserts, illegally siphoned off natural gas in transit).

Furthermore, it was intended to be a more attractive alternative to a trans-Caspian pipeline, which would send eastern Caspian gas to Turkey via BTE—one more weapon in Russia's energy arsenal aimed at denying Georgia opportunities for European integration and economic stability. European environmental groups objected to the pipeline, with concerns about leaks on the seabed fouling the sea, and the United States publically objected to its development, exhorting Europe not to become ever more dependent on Russian energy.

Finally (for the time being), expectations of rising natural-gas demand in Europe and huge production increases in Azerbaijan have led to a proposal for a Georgia-Ukraine-EU (GUEU) pipeline. It would branch off from BTE in Georgia, run to Supsa and then undersea to a Ukrainian Crimean terminal, and then connect with Ukraine's main distribution network for delivery to Poland, Lithuania, and Slovakia. The backers of GUEU take pains to insist that it will not compete with Nabucco or BTE, as demand will be sufficient for all routes to operate at capacity.

Further consideration of GUEU brings us to the issue of Russian control over Black Sea countries' domestic oil- and gas-transmission networks. Despite wielding tremendous power as a supplier, Gazprom can be outplayed when it doesn't own its export routes, as occurred during the pricing dispute with Ukraine in 2006. Since then, Gazprom has launched a northern route, Nord Stream, which runs under the Baltic Sea to Germany, cutting out Ukraine, as well as South Stream, which cuts out Turkey. In addition to these new ventures, Gazprom seeks to buy and exercise control over domestic pipeline networks, especially in Ukraine and Georgia—which have greatly resisted such efforts—but also in Belarus, Hungary, and Poland.

Such ownership not only gives Gazprom more effective control over pricing and a greater share of profits, but as a state-owned company gives Russia political leverage over those countries. Europe has in many areas demonstrated that Georgia and Ukraine play important roles in European and broader regional security, so allowing Russian control over their energy infrastructures poses a potential threat to Europe's security more generally, not just to its energy supply.

Russian control over Black Sea domestic energy networks concerns Europe not only for the leverage that it gives Russia over those countries, but for the threat that it poses to Europe's own interests. For instance, Gazprom now owns a controlling stake in Armenia's domestic gas-distribution network and its pipeline from Iran. Since Iran is a potential supplier of natural gas to Europe (most easily via Nabucco), this ownership allows for Russian-Iranian collusion to reduce competition and keep prices high. Furthermore, it gives Russia even greater influence over Georgia: now that Armenia will get natural gas from Iran, rather than via the pipeline through Georgia, Gazprom will be able to toughen its negotiating tactics even more. If Gazprom bought Georgia's main trunk pipeline, it could deliver Iranian gas into Russia's domestic network, for export onward

It would be remiss not to mention potential vulnerabilities of Black Sea region energy infrastructure to conflicts and terrorism. Worldwide, oil and natural-gas extraction and transit is

conducted both near to and within potential and actual conflicts; like harsh physical environments, these are factored into prices, and when the price is right someone will be prepared to take the risk. Even so, with narrow production margins for now and the foreseeable future, small disruptions from

Concerning its overall relations with the Black Sea and Caspian regions, the EU needs to realize their strategic importance and develop more proactive approaches toward these regions within its long-term political and economical security strategies.

The EU could undertake several measures to support the region's development and improve EU access to its resources.

These include supporting the development of infrastructure for energy and trade, and the promotion of active investment policies.

Caspian energy resources have the potential to substantially diversify Europe's energy supplies away from a current over-dependence on Russia. If supported by the appropriate policies, Europe has the potential to, in several years, emerge as better-situated and stronger vis-à-vis Russian energy dominance.

To achieve this goal Europe will need to do the following: To elaborate and implement the common energy strategy, where the need of individual states will be harmonized with common European needs; To develop an infrastructure that would support the common strategy by providing additional access options to resources in Central Eurasia;

To move forward toward the integration of the Black Sea/Caspian Region into the European economic space, and for those who express will and show the readiness, to move forward toward European political space. The Black Sea/Caspian region holds great potential for a positive contribution to Europe's economic and energy security.

Promotion and political and financial support for Trans-Caspian and Trans-Black Sea energy infrastructure to ensure alternative energy supplies to Europe from the Caspian region via two major routes: a) Eastern Caspian-Azerbaijan-Georgia-Turkey, to Europe, for natural gas and oil, and b) Eastern Caspian-Azerbaijan-Georgia-Ukraine, to Europe, for mostly oil.

The EU's action has to focus primarily on how to manage interdependence in energy relations in developing, when possible, multilateral governance frameworks for energy transfers and investments. The prospect is that the institutionalization of transparent, mutually agreed rules and procedures will render the interdependence relationship more certain, as norms tend to stabilize behaviors. In limiting possible behavior to a corridor of legally permitted actions and in setting up a dispute settlement procedure the governance approach

tries to minimize arbitrary, unexpected actions by withdrawing opportunities for politically motivated action through its transfer to the domain of law.

The realization of the internal energy market in the EU will foster investment and innovation and contributes to the security of supply. Member States should promote the principles of the internal energy market in bilateral and multilateral fora, enhancing the Union's coherence and weight externally on energy issues. The EU should help to create the environment for private capital flows and offer political and financial support to economically feasible projects, as appropriate. The EU has to continue its support for cooperation initiatives aiming at creating predictable and transparent energy markets by extending the application area of the Acquis beyond the borders of the Union. Integration of energy markets will stimulate investment and economic growth as well as security of energy supply for all. Only the development of the appropriate legal and financial framework permitting fair and transparent transit conditions will enable the Black Sea countries to play a major role as a gas transit country to the EU.

The EU should use all its weight in current and future bilateral negotiations and agreements, offering balanced, market-based solutions, with the Black Sea region, both with suppliers and transit countries.

4.1. The Role of the Black Sea Region in the Georgian Gas Crises

Forming part of a *new neighborhood* and at the same time caught in a distance proximity paradox, the Black Sea region is one of the very few regions where greater EU involvement in conflict resolution has been both sought and opposed.

Overall, the EU involvement in the region so far typifies a capability-expectations gap case. However, the current significance of the region for the EU outweighs any considerations of geography or its institutional timetable since the region presents a number of significant security challenges that characterize the post-Cold War period and constitute a threat for the stability and prosperity of Europe, including, among others, the conundrum of energy security and separatist movements. If the question that arose before the Georgian crisis of August 2008 was whether the EU could play a significant role, the crucial question now is how to play that enhanced role.

Strengthening the Union's position is of vital importance and it requires a coherent strategy entailing a number of key characteristics such as: a single voice, an enhanced Black Sea Synergy, physical presence, creation of a Contact Group, working with Russia („soft power” diplomacy), drafting a strategy with the US and last but not least strengthening the Europeanization project in the region.

Following the war between Georgia and Russia in August 2008 and the ensuing Russian recognition of independence of South Ossetia and Abkhazia, the Caucasus has risen again on the Euro-Atlantic security agenda. First, the war highlighted that the frozen nature of the South Caucasus conflicts was a chimera, even if the war may have entrenched further the frozen nature of peace processes in the region. Second, the crisis generated new sources of instability for the entire post-Soviet space, not only because it highlighted a new form of Russian revisionism but also because it brought to the fore the limits of Western policies in what Kremlin views as its sphere of influence.

The war brought to the forefront the colliding foreign policy agendas of the major external actors in the region. Not only in the run-up to the war, but also in the months and years preceding it, the American and European responses to Russia have been firm in rhetoric but compromising in reality. Russia made it clear that it has its own claims over the South Caucasus, it demonstrated its readiness to embark on military confrontation in order to achieve its goals,

and through the war it wished to make crystal clear to the international community that Moscow is the only game in town.

Third and related, the war exposed the inability of the West to prevent Russia from moving aggressively to restore its primacy over the former Soviet Union's territory. Thus the August war posed new implications and challenges not only for Georgia, but also for the wider Caucasus and beyond. This new context has induced the West to react and redefine its strategy towards the region and its relations with Russia, it has raised the urgency to engage in conflict resolution issues, and it has highlighted further the need for energy diversification.

Even if the long-term repercussions of the Russian-Georgian crisis are not clear yet, this article seeks to analyze the main implications and challenges for the countries and entities in the region as well as for the major external powers involved in Caucasian-Central Asian affairs. In the wider Caucasus we include Georgia, Armenia, Azerbaijan, the secessionist entities Abkhazia, South Ossetia and Nagorno Karabakh, as well as the autonomous republics of the North Caucasus within the Russian Federation.

In the wider region we also include Kazakhstan, Turkmenistan and Turkey, as these states are closely linked with the Caucasus in strategic, economic-energy and communication terms.

The chapter will analyze new realities in the Caucasian-Caspian region emerged after the August war by tackling the following issues: the current political landscape in Georgia and new developments around the secessionist conflicts; implications for some Central Asian countries in defining their foreign policy priorities; the Turkish proposal for a Caucasus Stability and Cooperation Platform and the Declaration between Azerbaijan, Armenia and the Russian Federation; and tensions in the North Caucasus.

The argument is not that developments in the wider region are the direct product of the Georgian-Russian war, but rather that this conflict opened the door to more demands for independence and thus new challenges for neighboring countries and the international community. Before the Russian-Georgian war the question was whether the West and in particular the EU could or should play a more significant role in the South Caucasus.

The urgency of the crisis and its implications has turned that question into how the EU and the US could engage with the region more intensively. Strengthening Euro-Atlantic policies in the Caucasus requires a redefinition of a strategy not only towards the eastern neighborhood but also towards Russia. Many European states share with Russia common interests and thus are not willing to sacrifice these even at the cost of further destabilization in

the South Caucasus. In this context, this article analyses the limits and leverages of the international community to handle together with Moscow conflict issues in the Caucasus.

Since the August 2008 war a new geopolitical reality has been emerging in the Caucasus-Caspian region. Beyond Georgia, the Georgian-Russian crisis posed challenges to other states in the region and to the region in general. The former Soviet republics did not back Russian actions and recognize the independence of the secessionist states: the Central Asian republics, alongside Azerbaijan and Armenia called for consultations with Russia, Kazakhstan stressed the importance of the implementation of the six-point agreement, the Ukraine and the Baltic States backed Georgia's territorial integrity, and Belarus affirmed the need for peace negotiations.

However, the New Independent States, faced with Russian revisionism and Western passivity, wonder whether it is worth complicating their relations with Moscow for the sake of limited or uncertain support from the West. Besides, almost all have their own minority and border issues that could render them potentially vulnerable vis-à-vis Russia. The August war underlined also the fragility of the Black Sea region. GUAM, the security alliance uniting Georgia, Ukraine, Azerbaijan, and Moldova, failed to react to the aggression towards one of its members. Only Ukraine denounced Russia's military actions, whereas Baku and Chisinau kept silent. Indeed all these states have reasons to fear Russia, and thus opt for neutrality in such situations.

All of the Central Asian republics, first and foremost Kazakhstan and Turkmenistan, may also become more careful in defining their foreign policy orientations. Astana understands that its security depends on relations with Moscow and will thus avoid taking clear positions in Caucasian affairs while seeking to balance its pro-Western and pro-Russian stance. Astana's economic ties with Georgia remain unclear. On the one hand after the war Kazakhstan began withdrawing its investments from Georgia, while on the other the Kazakh oil company announced its intention to proceed with the plan to participate in the Baku-Tbilisi-Ceyhan (BTC) pipeline with ensuing investments in Georgia's Batumi oil export terminal.⁸³ Indeed Kazakhstan pursues its economic interests in Georgia, owning a 50% share of the KazMunaiGas national Oil Company at the Batumi terminal, which was threatened by military clashes in Georgia. Furthermore the Baku Energy Summit's final declaration signed by 15 countries and the European Commission confirmed the intention to support further the policy

⁸³ Business Confidence Returning to the South Caucasus Transport Corridor, Eurasia Daily Monitor, Vol.5, Issue 186, 29 September, 2008

of diversification of oil and gas supplies from the Caspian region to European markets, thus to support Nabucco, the Interconnector (Turkey-Greece-Italy) and the Odessa-Brody-Plots-Gdansk pipeline projects. According to the agreement between Azerbaijan and Kazakhstan, the daily capacity of oil from the Kashagan field to the BTC pipeline will increase. Energy resources will be shipped to Europe via the Georgian Black Sea ports of Batumi, Poti and Kulevi. Russian officials and industrialists did not attend this summit.⁸⁴

Meanwhile Russia is deepening its military ties to Kazakhstan. In September 2008 the two countries conducted their largest joint military exercise since the collapse of the Soviet Union. The joint military exercise coincided with the Collective Security Organization (CSTO) summit, which agreed to a more rapid deployment of forces in Central Asia. Even if potential enemies were not identified, the statement calls on NATO to consider the consequences of the eastward expansion of the North Atlantic Alliance.⁸⁵

Moscow has also manifested its interest in the Ayni military airfield in Tajikistan as a possible base for Russian air forces. Also Kyrgyzstan favors military cooperation with Russia. According to the results of an opinion poll conducted by 24.kg news agency in Kyrgyzstan, the majority of respondents (46%) see Russia as the most important military ally, while the US scored less than 4% and is considered as an enemy. Cooperating with Moscow in the military domain is indeed far easier for the Central Asian authoritarian regimes than cooperating with Western powers which condition cooperation to reforms in these countries. Russia also seeks to strengthen its position as a transit country of Caspian energy resources. Recent discoveries of gas reserves in Turkmenistan have altered the geopolitical and geo-economic importance of this country and consequently the importance of transport routes from the Caspian Sea to Western markets. According to Gaffney's audit report Turkmenistan holds the second largest gas reserves in the world, guaranteeing the supply of the Nabucco pipeline.⁸⁶

From 2009 onwards Russia intends to increase its purchases of Turkmen gas in order to maintain a monopoly in this field. Furthermore a preliminary agreement was signed between Medvedev and Nazarbayev on the construction of a transport corridor linking Russia with Western China via Kazakhstan. Even if Kazakhstan has an ambiguous position, it can be regarded as an important ally for Russia in Central Asia. And in the absence of strong Western action, Astana and Ashgabat may be better served by turning to China in order to secure

⁸⁴ Energy summit in Baku Advances Regional Energy Cooperation, November 24, 2008

⁸⁵ South Ossetia tests Kazakhstan's Foreign Policy Priorities, Eurasia Daily Monitor, Vol. 5, Issue 180, September 19, 2008

⁸⁶ Audit Firm Confirms Huge Turkmen Gas Reserves, Associated Press, October 14, 2008

diversity in their energy exports, aware of the fact that energy resources and international projects alone do not guarantee their country's security.

During the Georgian-Russian crisis, when the BTC pipeline was frozen, Azerbaijan diverted its oil supplies to Russia via the Novorosijsk pipeline and to Iran via the Neka port. After the war, Baku continued its supplies through these routes. Furthermore Russia has offered to buy the entire volume of gas available for export from Azerbaijan. Hence, the development of the Nabucco- and Odessa-Brody projects is no longer certain. Azerbaijan's uncertain foreign policy orientations can hinder Europe's direct access to Caspian resources. It seems also that Azerbaijan does not intend to take sides in the US-Russia rivalry in the region and will maintain balanced relationships with Moscow and the Euro-Atlantic Alliance. Baku considers that ignoring Russian interests in the Caucasus can only cause destabilization, as the events in August demonstrated. Moreover this conflict demonstrated that European and American actors do not have sufficient means (or sufficient willingness to use these) to protect the South Caucasus from Russia. Regarding the Nagorno-Karabakh conflict, Azerbaijan has already declared that the EU cannot pursue a unanimous policy on the issue and can thus not be considered as a peace broker. In view of the currently blocked status of peace talks on Nagorno-Karabakh, the Minsk-Group process led by Russia, France, and the US can also be viewed as dead or dying. Hence, the likelihood of a persisting stalemate in the Nagorno-Karabakh peace process, a likelihood which increased further in light of the Russian-Georgian war.

During the August war Armenia also maintained its neutrality, despite its damage from the war amounting to over \$670m. The losses would have been greater had Armenia not maintained constructive relations. With Georgia, as Armenia's prime minister stated.

Armenia is greatly dependent on Georgia in so far as Georgian ports represent Armenia's main gateways to foreign trade (approximately 70% Armenian trade takes place through this corridor).⁸⁷ After the war, Yerevan appears to have recognized its need for economic access and thus the normalization of relations with Turkey and Azerbaijan have become the priority of Sargsyan's foreign policy. Armenia is ready to establish bilateral relations without any preconditions and we are expecting the same from the Turkish side⁸⁸, affirmed Armenian Foreign Minister E. Nalbandian. After the meeting between the two

⁸⁷ Armenia in Need of an Alternative Export-Import Route,. Eurasia Daily Monitor, Vol.5, Issue 195, October 10, 2008

⁸⁸ .Armenian Foreign Minister Urges Turkey to Reopen Border,. RadioFreeEurope, RadioLiberty, November 24, 2008

countries foreign ministers, talk about reconciliation has been prominent. Furthermore on 19 November Serzh Sargsyan met with the leaders of several Armenian political parties and announced he was ready to arrange referendum on a compromise peace agreement on Nagorno-Karabakh, although it is unlikely that Armenians will vote for compromise in a referendum. Some political analysts suggest that Sargsyan's new policy towards Turkey and Azerbaijan may generate divisions within the government.⁸⁹ Some nationalist groups have already launched a new movement called Miatsum (Unification) rejecting the return of the liberated territories to Azerbaijan. The Armenian Revolutionary Federation (ARF), an influential nationalist party within Sargsyan's coalition, rejected Sargsyan's initiative also.⁹⁰ Nevertheless Turkish-Armenian relations seem to be entering into a new stage that was marked first by the soccer diplomacy, in September and later with the meetings between officials in New-York.⁹¹

Finally, the August war also posed implications for Ankara, as Russia tries to regain control over pipeline routes to Turkey. Ankara is an important actor in the South Caucasus, presented as a neighbor and a strategic and economic partner which provides military assistance to Georgia and Azerbaijan in the field of training and equipment. Besides, Turkey is an important link for the EU to the South Caucasus and Central Asia. Ankara is a strategic partner for both the EU and US, and is developing closer relations with Russia in terms of trade and energy. Indeed Turkey's closer ties with Russia are also linked to the resistance Ankara is facing from the EU in its accession process. The Georgian-Russian crisis placed Turkey in a difficult position not only between neighboring partner-countries but also in the wider confrontation between the US and Russia. In view of this, Ankara stayed out of the conflict, neither defending its regional partner Georgia nor making official statements on the matter.

Erdogan admitted that it would not be right for Turkey to be pushed towards any side. Certain circles want to push Turkey into a corner either with the United States or Russia after the Georgian incident. One of the sides is our closest ally, the United States. The other side is

⁸⁹ Peace on the Moscow Horizon?: Russian President calls Caucasus Leadership to Kremlin for Negotiations, October 31, 2008

⁹⁰ Armenia Debates an Elusive Peace with Azerbaijan, Eurasia Daily Monitor, Vol. 5, Issue 226, November 25, 2008

⁹¹ In September 2008 Turkish President Abdullah Gul visited Armenia and attended a football match between the two historic confronted parties becoming the first Turkish leader to set foot in Armenia since the end of Nagorno-Karabakh conflict.

Russia, with which we have an important trade volume. We would act in line with what Turkey's national interests require.⁹²

Despite Turkey's participation in BTC, two-thirds of its gas comes from Russia. Hence, Ankara's careful juggling between Moscow and the US and its Caucasian partners.

EU and US policies towards the South Caucasus are interwoven with relations with Russia. Therefore Western policies were and remain limited, by the limited European leverage over Russia. True, Russia has high stakes in its relations with the EU in view of its economic and financial ties to European markets. Russia is also dependent on Western markets to acquire technologies for its energy development and military build-up as well as to buy firms or raise capital.⁹³

Yet on the other side of the coin, the EU is dependent on trade and energy from Russia, and imposing economic sanctions would harm Europe itself. Hence the prospect of isolating Russia, with its size, natural resources, nuclear weapons and UNSC veto right was and remains unlikely, particularly for the sake of the Caucasus. The German and French position at the NATO summit in April 2008 and later in December not to grant Georgia and Ukraine the Membership Action Plan (MAP), was clear demonstration of this.

The US also needs Russia, to cooperate on such issues as Iran's nuclear affairs, counterterrorism, and non-proliferation. As noted by Kissinger and Shultz, the US should decide whether to deal with Russia as a possible strategic partner or as a threat to be combated.⁹⁴

Furthermore, lack of understanding and juxtaposed interests continues to complicate relations. For example, after the August war Poland agreed to deploy a missile defense system on its territory and boosted its military ties with the US. Washington also agreed to deploy a Patriot anti-craft missile (PAC-3) battery in Poland capable of neutralizing Russian missiles. Medvedev affirmed that the US decision would naturally lead to Russia's response that is the deployment of the Iskander missile system in Russia's Baltic exclave of Kaliningrad. A fundamentally new geopolitical situation has taken shape.

The August crisis merely precipitated the moment of truth. We demonstrated in practice, to those who sponsored Georgia's present regime, that we are able to defend our national interests-added the Russian president.

⁹² .Turkey and the Crisis in the Caucasus, Commentary, Center for Strategic & International Studies, Washington DC, September 9, 2008

⁹³ Cohen, A., .Dealing with Russia, September 9, 2008

⁹⁴ Kissinger, H., Shultz, G.P., .Building on common ground with Russia, October 8, 2008

By contrast, the major areas of US-Russia cooperation include multilateral initiatives such as the six-party talks on North Korea, the P5-plus-one-group on Iran, the Middle East Quartet, initiatives to combat nuclear terrorism and Russia's WTO accession. The Iranian question remains the major domain of dispute, with Russia vetoing proposed sanctions against Tehran, deciding to develop cooperation with Iran and launching a new initiative for the creation of an OPEC-style cartel on natural gas together with Qatar. In this context, the West has limited leverage to intervene in the Georgian-Russian conflict and Russia can quietly ignore Western warnings.

The EU is currently developing its relations with Georgia in the framework of the Eastern Partnership, including visa facilitation measures and the establishment of a comprehensive free trade area. In this context, the EU also pushes for regional cooperation in the framework of the Black Sea Synergy. The US instead decided to supply Georgia with aid for reconstruction of damaged civil and military infrastructures and to deepen bilateral relations with Tbilisi.

On 9 January 2009 the US and Georgia signed a new US-Georgia Security Pact, covering areas such as democracy, defense and security, economic, trade and energy, and cultural exchanges. Deepening Georgia's integration into Euro-Atlantic institutions is a mutual priority, and we plan to undertake a program of enhanced security cooperation intended to increase Georgian capabilities and to strengthen Georgia's candidacy for NATO membership,⁹⁵ states the pact. The US administration affirms however that the Charter is not a security guarantee and that security guarantees will come along with NATO membership.⁹⁶ Beyond these initiatives and in light of the existing power balances and interdependencies, a set of measures could still be implemented aiming to alter Russian incentives and actions in the Caucasus. The EU could delegitimise the Russian recognition of Georgia's secessionist regions by affirming that it would stop the funding countries that recognizing Abkhazia and South Ossetia; Insist on the fulfillment of the six-point agreement by Russia and in particular Russia's redeployment to the 6 August lines; Establish EU peacekeeping in Georgia and expand its civil observer mission.

All these measures would need to be conceived within a new coherent strategy towards the whole region. The EU strategy could cover different areas: conflict resolution and dialogue with Russia on Caucasian matters; enhancement of regional cooperation in the framework of

⁹⁵ United States-Georgia Charter on Strategic Partnership, Civil Georgia, January 9, 2008

⁹⁶ Georgia, U.S. Sign Strategic Partnership Charter, Civil Georgia, January 9, 2008

the Black Sea Synergy; energy security and serious engagement with the Caspian region. In doing so the EU would have to confront a new reality: whereas before the August crisis the EU was considered by Russia as an unbaked broker in the Caucasus, now Moscow may start viewing Europe as a rival in the region.

In any event the EU should define a common strategy with the US for acting in the wider Caucasus and find a common approach in dialogue with Moscow in order to create a win-win situation. The EU should also not foreclose the long-term EU ambitions of the Caucasian countries, given the power of the European dream for both the metropolitan states and the secessionist entities to reform their governing structures.

Furthermore the EU should find a way to collaborate directly with the *de facto* governments and help them overcome their isolation and exclusive dependence on Russia.

This chapter has outlined and analyzed the short-term outcomes of the Georgian-Russian crisis in Georgia as well as the wider region and the role of the Black Sea region in this conflict. The political consequences for Saakashvili's career are unknown. Much depends on whether Georgian president implements the recently announced reforms. Furthermore the opposition is likely to overthrow Saakashvili only if it succeeds in forming a new, appealing and alternative vision for the country and coalesce around one leader. The West bears significant responsibility and leverage to induce Georgia into pursuing a democratic path. Indeed now that the military conflict is over, the international community should press the Georgian government to promote the rule of law, thus creating an independent judiciary, strengthening decentralization and local authorities, guaranteeing property rights, and abolishing state control over the media.

The resolution of the conflicts has instead become less likely following the war. True, the new 2009 Georgian draft budget calls for a significant reduction in defense spending, as opposed to the major shares allocated to defense in recent years. However this decision came too late. Since his rise to power, Saakashvili tried to demonstrate he could regain the secessionist regions by military means, thus harboring profound mistrust by Abkhazians and Ossetians. Georgian militaristic rhetoric as well as the military clashes in South Ossetia in 2004 conclusively persuaded the secessionist regions that reintegration into Georgia would threaten their security. Saakashvili has thus done little to shed memories of Georgia's ultra-nationalistic past. Furthermore, the Georgian interpretation of the conflict as one between Georgia and Russia has ignored the aspirations and motivations of the Abkhaz side. The ultimate mistake was in the summer of 2008 when Saakashvili fell into the Russian trap and allowed himself to

be provoked, responding by military means and demonstrating the excessive concentration of power in his hands and the weakness of Georgia's democracy.

While the Geneva negotiations have created a forum for dialogue between all parties, they have come too late to meaningfully affect the outcomes of the conflicts. The integration of the secessionist entities into the Russian Federation is unlikely to happen in short-run, but may occur in the long-run when the russification of these entities will be complete. Considering Western limits in handling Russia in the post soviet space, specifically with respect to Russian military withdrawal and an expansion of the EU-observers mission, Georgia cannot count on the international community to resolve its conflicts. Tbilisi has to elaborate a new concept of relations with Russia and become more realistic about its accession in NATO. It is true that neither Georgia nor Ukraine comply with the democratic conditionality of NATO membership, but even if Georgia were to meet all requirements, several NATO members are likely to continue objecting to Georgian membership on Russian grounds and in view of the pending conflicts.

The Turkish Caucasus Stability Pact and the Russian declaration are unlikely to change the situation. Moscow and Tbilisi on the one hand and Baku and Yerevan on the other are unlikely to collaborate on such platforms in the foreseeable future. It is also doubtful that Ankara will succeed in improving its relations with Yerevan to such an extent that it is able to influence Armenia to make compromises acceptable for Azerbaijan. What is more likely is that these initiatives will represent further steps in maintaining the status quo in a manner that is acceptable to Russia. Although timid steps forward may be possible in Turkish-Armenian relations, as Turkey is slowly beginning to realize that its economic isolation of Armenia has borne no fruits, Turkey's dependence on Moscow has increased and Armenia remains far more tied to Russia than any other regional actor. Therefore only Moscow can push Yerevan to compromise and it is unlikely to do so. One positive by-product of the war is however be that Azerbaijan may have shed ideas of regaining lost territories through military means, despite the declared rise in Azerbaijan's defense budget.

In this respect, notable was the Russian veiled warning to Azerbaijan that in the event of renewed armed hostilities it would interfere in the conflict in so far as Armenia (and not Azerbaijan) is a member of a Russian-led CSTO. In other words, the key to conflict resolution in the Caucasus remains in the Kremlin's hands and Turkey's initiative may be read as a further step in this direction.

Moscow's decision to recognize South Ossetia and Abkhazia can have far reaching consequences. Even if the situation in the North Caucasus has not reached the brink, it may be have a domino effect for Russia. This said, two Chechen wars resulting in 200,000 deaths demonstrated that the North Caucasian peoples cannot count on Russian tolerance or Western reactions and we are unlikely to see a renewed massive insurgence and open conflict against Kremlin. By contrast, Moscow may feel emboldened to pursue military actions in the North Caucasus. Considering that international community was unable/unwilling to stand up against the invasion of sovereign country as Georgia it is unlikely to react to a Russian military escalation in the North Caucasus.

These trends are reinforced by the EU's implicit acceptance of the status quo. However, in the long-run only the economic development of the metropolitan countries, their genuine democratization and their real prospects of becoming anchored in Euro-Atlantic structures, alongside effective confidence building measures between the parties, could induce the secessionist regions to rethink their future status.

In this context, Georgia should concentrate on democracy building, economic and social development, in order to become an attractive country in which ethnic Abkhaz or South Ossetian citizens might wish to live in. Only democratic Georgia can convince the Abkhaz and Ossetians that their individual and collective rights will be respected within Georgia.

Fig. 18 – Map of Georgia – The August 2008 Crisis



4.2. The Black Sea/Caspian Region in Europe's Economic and Energy Security

The objective of this chapter is to demonstrate the potential for cooperation between Europe and the Black Sea/Caspian Region in the areas affecting economic and energy security. This region fits the new strategic view of European development, providing alternative energy and other natural resources, as well as other factors of economic security: including human capital and new market opportunities. Ukraine, Georgia, Azerbaijan, and others are in need of access to European markets not only to export or transit hydrocarbons, but also to promote additional economic opportunities with other resources and agribusiness products.

In addition, they seek active security cooperation from Euro-Atlantic structures. Europe needs the natural resources of Central Eurasia, new markets for its goods, and a relatively cheap labor force in order to maintain its competitiveness in the world economy. At least two key factors have great importance for Europe: the first is that Ukraine, the South Caucasus, and the Central Asian States together have a joint population of nearly 130 million people, thus offering a substantial market for European products and services, as well as potential labor force in light of the aging population in Europe.

The second is that Caspian energy resources have the potential to substantially diversify Europe's energy supplies away from a current over-dependence on Russia. If supported by the appropriate policies, Europe has the potential to, in several years, emerge as better-situated and stronger vis-à-vis Russian energy dominance.

To achieve this goal Europe will need to do the following: To elaborate and implement the common energy strategy, where the need of individual states will be harmonized with common European needs; To develop an infrastructure that would support the common strategy by providing additional access options to resources in Central Eurasia; To move forward toward the integration of the Black Sea/Caspian Region into the European economic space, and for those who express will and show the readiness, to move forward toward European political space.

Recent developments in Europe and Central Eurasia, as well as growing tensions between the EU and Russia over energy issues, have brought new opportunities for alternative suppliers of energy and transit corridors. The energy disputes of early January 2006, when the disruption in Russian gas supplies to European countries, including Germany and Italy, reaffirmed Europe's vulnerability in its dependence on imported Russian gas. Russia's political

decision to cut off gas supplies to Ukraine, the main transit country for Russian gas headed to Europe, amid a dispute over prices, awakened the EU.

The Russian government seemingly replicated this incident in early 2007 when a price and transit fee dispute with Belarus caused another crisis. These incidents have shown the weakness of Europe and diminishing power of the consumer amid high energy and resource prices in the world.

At the same time, these cases demonstrated both Russia's power as a main supplier, and also that it has less dependence on European energy buyers than before. Due to very high oil prices Russia is now in a stronger position to dictate many conditions to its European consumers, not only in terms of pricing issues for natural gas, but also its interest in acquiring distribution networks and downstream assets in Western Europe. Russia's position relative to Europe on this issue is likely to remain very strong through the next decade before alternative supplies are developed and the energy balance is transformed. As it was mentioned, this can only happen if there is a unified, strategic policy towards the alternative options of economic and energy security, based on a comprehensive understanding of the historical, cultural, and economic context of the surrounding countries, particularly ones who aspire to be integrated into the European space.

An interest in economic security has forever been a driving force for the political and societal development of states, and more than ever, guarantees to the access of resources and markets stand to determine the geopolitics of the twenty-first century. Historical experience proves that relatively easy access to resources, open trade, and the readiness to accept new ideas helped spark European development in the sixteenth century ahead of the Islamic world and China, eventually becoming the world leader by the end of the eighteenth century.

In the modern world, economic welfare and prosperity are the most important building blocks of national security. By the end of the twentieth century, nations – more than ever – realized that instead of expanding their frontiers by force and instead of the costly operation of controlling territories, they could peacefully, without the use of military force, improve their access to factors of production and markets located within other states.

This of course does not eliminate power as a factor of international relationships. Obviously, large and powerful states are able to pursue more assertive policies, but it is no longer an effective policy for larger powers to bear the political and strategic costs of having to rule over others directly, when the possibility exists to exploit resources through trade and capital movements.

However, there may be some specific exceptions from this general trend.

Temporary scarcity or the perception of scarcity of physical resources, such as oil, food, or water could determine the military actions of nation-states. But the effectiveness of such actions in the long run is questionable. Most of the former imperial powers, including Russia, with its internal struggle to conceptualize this new reality, came to the understanding that economic presence is now more important than its military alternative, although unlike other big powers, like the US, or UK, Russia still prefers control over shared access to resources.

The world is facing serious economic security challenges, predominantly determined by the growing population and growing need of resources in developing countries. The world's population will increase to 8 billion by 2030 from the current population of 6.5 billion, and 95 percent of that growth will be in developing countries. If this population growth is supported by growing economic potential and standard of living, more and more resources, and in particular energy resources, will be required. The International Energy Agency predicts a 50% increase in energy demand by 2030, even if efficiency is increased. About 70 percent of this increase is going to be in developing countries, and those countries are relying primarily on fossil fuels because of the very significant cost advantage. Just the aforementioned general numbers indicate the inevitability of increased pressure on the European economy. In addition to energy needs, there will be other driving factors for the economic security of Europe for years to come:

- An aging population in Europe, along with a diminishing workforce and a changing demographic composition will affect market structures as well the structure of required jobs and services.
- Depletion of the domestic energy reserves and the growing import dependency on energy resources on the backdrop of growing demand for energy in the world; the growing role of Russia as energy supplier and the need for diversification.
- Growing physical limits of access to resources and in particular to oil and gas fields.
- Substantial transfer of wealth from Europe, and the West in general, to resource rich states, including Russia; State-sponsored sovereign funds beginning to operate on European markets, acquiring substantial infrastructure and other assets, with the consequences still to be assessed.
- Different approach to energy security between Western and Eastern Europe. The Soviet time infrastructure legacy determines the higher degree of dependency on Russian energy of the East.

- Russia's increasing need for the resources of Central Asian/Caspian states to supply Europe with natural gas, thus increasing the importance of transit through Russia; But instability in transit issues that are related to both political factors, as well as reliability of supply and infrastructure, is creating economic threats to Europe.
- Status of Iran; if conditions are right and political developments in Iran would allow Europe to build closer ties with that nation, it could dramatically improve the energy security of Europe over the next decade.

All those factors are greatly affecting Europe and will have long-term security implications for the entire Transatlantic and Eurasian space. Demographics will be the most important issue for the economic security of Europe. Europe's share of the world's population has shrunk dramatically in the last 30 years, from about 15 percent of the earth's inhabitants to around 6 percent. Europe already has the oldest population on earth, and as this continues, it will further see a dramatic reduction in the natural size of its work force population – unless imported from other countries.

In order to move somewhat closer to the objectives stated in the Lisbon Agenda, Europe needs to open opportunities for its own citizens and for others as well. One important issue for the economic security of Europe will be the connection between the business environment and demographics. As a result of the existing government-controlled economic model, with limited working hours, extremely generous benefits to the unemployed, limited competition, and difficult rules for hiring and firing, Europe is losing both its own talented individuals and also many potential investments. This worsens its demographic problems, and Europe's objective to become the most competitive and dynamic knowledge-driven economy by 2010 seems set to become just an unfulfilled dream. By protecting some jobs through government policies and subsidies, most of the EU countries are losing more attractive jobs and business, sinking into greater unemployment, all requiring more benefits spending. 'Brain drain' is becoming a reality in Europe, as its talented people increasingly prefer to relocate to a more business friendly environment in North America.

Another important factor added to the spectrum of European economic security challenges is the increased pressure from Russia to allow state controlled energy companies, predominantly Gazprom, to acquire energy and other economic assets in Europe, while Russia prevents involvement of foreign companies in the ownership of its own energy assets. In addition, Europe, like North America, is facing an increased pressure from government-sponsored investment funds focused on purchasing assets in developed countries. Several

investment funds set by the Russian government are already beginning to operate on European and U.S. financial markets, and these are perfectly capable of obtaining ownership of many important assets through attractive financial transactions. Russia successfully uses its power as a supplier in relationships with Europe, obtaining substantial advantages, while Europe is missing a similar opportunity: the EU fails to leverage the fact that it accounts for 60 percent of Russia's trade, 50 percent of its investments, and that Europe has become a major destination of travel, and sometime a second home to many wealthy Russians.

The most significant factors of national economic security are access to markets for key products, and access to a large spectrum of resources that includes human capital, money, water, food products, energy and other mineral resources. It is important to emphasize the critical significance of both physical security and the economic and commercial viability of access routes.

The factors of individual and national economic security are obviously interconnected and interrelated, although our focus lies mainly on factors of economic security at the national and supra-national level, and on the issue of access to markets and resources. In that regard, and in light of greater European dependency on Russian energy, the identification of viable alternatives for energy security is critical. The Black Sea/Caspian region is one such alternative.

Europe is one of the major trade destinations in the world. Millions of tons of cargo and containers, as well as tens of millions of passengers cross in and out of Europe's borders every year. They face different types of barriers in terms of access to markets. There are two major factors of economic security with the potential for affecting Europe's access to resources. The first factor is the geographic/physical factor. The second one is political. Both are very important, and in many senses interrelated. Linked to the two is energy, and for this reason, it is the key commodity to focus on. Energy access projects face difficulties as concentrations of oil reserves are often in geographically remote areas, far from major markets. The natural and political barriers make coherent access strategies for Europe an absolute necessity.

The major trade and supply routes destined for Europe currently pass through narrow straits, canals, and busy pipeline systems. Frequently, these routes traverse politically unstable areas, rife with a variety of security threats.

Of particular importance, of course, are the energy supply routes and relating transportation issues. For example, the Bosphorus and Suez are two of the most important transportation links connecting Europe with its important suppliers of resources. There are

several other existing and potential chokepoints in the world that require constant attention and management from the European perspective. Several of them, like the straits of Hormuz and Bab-el-Mandeb directly affect European energy and economic security.

There are also political barriers created by some states or international institutions. For example, Russia does not allow investments in its energy transportation infrastructure in order to keep control over the flow of energy resources, including the transit of resources from Central Asia.

The economic and trade potential of the Caucasus and Central Asia is largely untapped by Europe. Caucasus and Central Asian exports and imports constituted 313 million tons in 2005, and only 68 million tons of that constituted exports and imports to and from Europe. The European share of exports was 22%, out of 255 million tons, and 15% of imports, out of 66 million tons. Despite the fact that trade almost tripled since 2000, the ratio of European trade to the rest of the world is still minor. Oil and oil products dominate exports – about 70% of the total exports from the region.

Energy and European Security

A variety of different products and commodities are vital for the functioning of the European economy, but it is energy resources, notably oil and gas, that are of critical importance for the region in the immediate future. Europe is a net importer of energy, and according to a European Commission report, two-thirds of the EU's total energy requirements will be imported by 2020, with natural gas imports estimated to rise to 75%. The fact that there is a growing demand for energy resources in the world further adds strain to the issue of access. Unlike the United States, China, or Japan, Europe's geography endows it with a geographic proximity to major sources of energy.

Europe currently has three major sources of energy: the Northern Sea region and the potential Norwegian arctic sector from the north, Russia from the east, and the Middle East and North Africa from the south. Potential new players to join this list are the Caspian states, which have the potential to help Europe diversify away from its growing dependence on Russian oil and gas.⁹⁷

In fact, some of the oil already flows from the Caspian region to European refineries via the Baku-Tbilisi-Ceyhan pipeline and other transportation links.

⁹⁷ http://ec.europa.eu/energy/strategies/2006/2006_03_green_paper_energy_en.htm

Europe faces competition for resources from consumers that are larger and increasingly ambitious. Like in Europe, the United States' internal production share in the consumption of oil is declining rapidly, which means that U.S. dependence on imported oil will rise and, according to different estimates, may reach 68%, with an increased share of imports coming from the Gulf States. As the United States began to take pro-active steps toward diversifying its energy supplies in the early 1990s, Central Eurasian resources attracted increasing attention. There is a growing demand for energy in Asia, and in particular in China, and Chinese state-sponsored companies are aggressively pursuing opportunities in Kazakhstan and Turkmenistan at whatever cost. This tactic has worked for them elsewhere in the world, particularly in Africa and Latin America.

On the backdrop of this strategic energy picture, the security of energy supplies has become a dominant issue for European consumers. The Caspian Sea and Central Asian resources have a substantial role to play in the future oil supplies of the world. It is estimated that the Caspian will provide at least 10 percent of the expected increased production capacity in the next decade.

Based on the assumption that current oil prices will remain stable, oil production from the Caspian may reach 6 million bpd by 2020. The problem of the region is that it is landlocked and requires the development of new infrastructure, which would allow the potential of the region to be fully opened for the region itself, as well as for the broader European, and world energy security. Since maritime connections to the region are limited, the pipeline options for access to these markets are of critical importance for the region. Most often used for transcontinental oil movements, pipelines are critical for landlocked areas. They also complement maritime transportation by providing bypasses or shortcuts.

In general, pipelines are the primary option for transcontinental transportation since these are cheaper than railroad, barge, or road alternatives. Pipelines constitute a safe mode of transportation if operating within a nation's borders, or between neighbors such as the United States and Canada, Norway and the EU, or between allied countries such as Azerbaijan, Georgia, and Turkey. On the other hand, pipelines may carry vulnerabilities if crossing politically unstable areas. Moreover, political factors often play significant roles even in relatively stable areas, such as Russia. The political turmoil and price war with Ukraine was an issue of concern for European energy security, as a significant share of Europe's oil and natural gas supplies from Russia arrive via Ukraine.

Previous to the recent crisis over Russian gas, Europe was generally a passive observer of developments in the Central Eurasian region. The Baku-Tbilisi-Ceyhan pipeline (BTC), which connects Azerbaijan's offshore oil fields to the Turkish Mediterranean port of Ceyhan via Georgia, was developed only through strong U.S. support to the project. With the BTC pipeline now in operation, and the development of Caspian natural gas pipeline shipments through Turkey a reality, Europe is acquiring additional supply routes, without major political efforts on its own part. In addition to existing supply routes, Europe now has a Caspian-Caucasus-Turkey-Mediterranean oil pipeline, which can ship light Caspian crude oil directly to the Mediterranean, and then to the refineries in Southern Europe, avoiding the congested chokepoints. The BTC pipeline stands as an example of how strategic planning, coupled with well-designed policies, and effective implementation can help commercially viable projects materialize.

In terms of access to natural gas, Europe's major suppliers include Norway, Russia, Algeria, West Africa (LNG), and the Middle East (LNG). Europe's natural gas demand is projected to increase substantially in the future and exceed 700 billion cubic meters (bcm). Even according to conservative scenarios, the demand for importing natural gas to the EU will reach 400 bcm per annum by 2030. Russia will try to fill this gap with its own gas, as well as with gas from Turkmenistan, Uzbekistan, and potentially from Kazakhstan, if these countries do not have alternative delivery options by that time.

Among the top policy priorities for the EU, energy development aims for the "avoidance of strategic dependence". Despite this professed aim, Europe has a strategic dependence on Russia's Gazprom that has constantly preempted its potential competitors in European markets by outpacing the EU's development toward a secure supply-diversification strategy. Aside from dealing with the EU as a whole, Gazprom has pursued more bilateral channels by engaging various vertically-integrated European energy companies into the development of several new infrastructure projects that will result in an increase of export volumes for Russia and higher prices for European consumers. This will inevitably strengthen Gazprom's already dominant position in the European natural gas market.

On a parallel track, Gazprom is further entrenching its hold over Europe's natural resources market by acquiring internal transportation and distribution networks of the older EU countries (like Germany, France, Italy), according to the expansion pattern seen in new EU countries.

Gazprom has a very clear strategy: to obtain a strong dominance over natural gas supply and distribution networks in Europe. By obtaining control over the transit infrastructure in transit countries, Russia limits access to markets for other potential suppliers. By obtaining businesses in the distribution sector, Gazprom limits the ability of importing countries to conclude longterm gas purchase agreements with other producers. Frequently European companies have special insider roles in these arrangements, which make European energy security vulnerable to Gazprom's pressures.

European dependence on Gazprom varies from 22 percent of consumption in France, 44 percent in Germany, 60 in Turkey, 65 in Austria, 79 in the Czech Republic, 97 in Bulgaria, and 100 percent in Finland and Slovakia, to name a few. These are prominent examples of "strategic dependence." At the same time, Gazprom does not have funds for investment in exploration, and its future suggests a heavy dependence on gas from Turkmenistan and other Central Asian states. In the region, Gazprom has aggressively sought to channel all gas through its transit systems. Gazprom is not only after Turkmenistan's gas, but it has also pursued opportunities in Uzbekistan, Kazakhstan, and Azerbaijan. By becoming the sole transit system for Central Asian gas, Gazprom hopes to increase its share in the European gas market, which represents a challenge to Europe. All these developments, and potentially the construction of a new pipeline on the Baltic Sea bed en route to Germany, undercuts the EU's goals of supply diversification and ensures the almost monopolistic position of Gazprom in European markets. This will enable the Russian energy giant to set price levels, control distribution, and even consumption levels. As seen many times, Russia may use its role as a natural gas supplier as a political tool. The final stimulus, somewhat energizing European energy policy, was the new dispute between Russia and its usually obedient neighbor, Belarus, in early 2007. Subsequent cuts in supplies to European consumers convinced numerous European policymakers that a proactive diversification policy was the only effective response to Russia's actions.

On January 11 2007, the European Commission published a document entitled 'An Energy Policy for Europe'⁹⁸, including calls for a common energy policy to become a central element in the EU's external relations. It also recognizes energy security as a key factor of the EU's geopolitical security. This is a first important step toward a consolidation of Europe's energy policy, but much remains to be done and substantial resistance is expected from some European energy companies who hold monopolies in their markets and are closely associated with Gazprom.

⁹⁸ COM - An Energy Policy for Europe, 2007

In addition to pipelines and other energy related infrastructure, several important projects with implications for Europe's access abilities are currently under consideration. One is a network of highways connecting Baku to Black Sea ports in Georgia and then to the Turkish highway system.

This network can potentially be linked to Istanbul in the west, and the Mediterranean ports of Mersin and Ceyhan in the south. This would further serve to increase trade in the region and substantially shorten the time for shipping containers and other cargos destined for the Mediterranean and Southeastern Europe.

A railway connection between Azerbaijan, Georgia, and Turkey with the further European connection could dramatically increase the flow of goods between Europe and Central Asia and the Caucasus, and has the potential to link Europe to China. This would involve new projects connecting the railway system of Kazakhstan to China, thereby creating the opportunity to ship rail cars from Europe all the way to China via the Caucasus and a Caspian Sea ferry connection.

Considering the rapid development of China's Western region, with a population of 300 million and 102 billion dollars of ongoing investment programs, the potential of connecting to this region is arguably a very attractive opportunity for the European producers and service providers. A planned substantial expansion of the Poti port should allow transshipments from Central Asia to substantially reduce the time and costs for transportation to Europe. This is the shortest way to connect Europe and Central Asia, and potentially China via international waterways. With the potential turnover of 25 million tons and annual average growth rate of 15-18%, the port of Poti is by far the most convenient maritime outlet connecting the vast region of Central Eurasia to the EU through the western shores of the Black Sea, and through the Mediterranean via the Bosphorus. All these infrastructure projects will give the producers of Caspian energy and other outputs increased confidence in the availability of market access and would thus help to boost production in the region. It is clear that different shipment options will be considered and used to deliver cargo to the western shores of the Black Sea, and potentially to the Mediterranean. A greater Black Sea-Caspian Sea transit system is one obvious option to consider. Some of Europe's most pressing challenges and requirements – anti-terrorism efforts, energy supply, labor supply, institutional consolidation and enlargement, and available markets of substantial size – are to be met in this region.

Looking to the Future, The Black Sea/Caspian region holds great potential for a positive contribution to Europe's economic and energy security. The enlargement of both NATO and

the EU has positioned Europe strategically to benefit from deeper relations with the countries of this region. In addition to greater physical proximity and a developing transportation infrastructure, there is now greater political will in the countries of the region to develop closer links with Europe. Relationships with NATO and the enlarged EU are becoming the top foreign policy priorities for most of the states in this region. Presently lacking is a greater political will on Europe's part, based on a better understanding of the long-term political and economic security objectives by some European governments. The recent EU decisions and actions to boost closer ties with the countries included in the European Neighborhood Policy⁹⁹ is a small step in the right direction, but what the countries of the region need is a long-term strategy of greater integration of the region with European structures.

As mentioned above, Europe needs access to resources, markets, and most importantly—people. The countries of the Central Eurasia region can provide these important elements to the European economy. In order to be positive examples of transformation, the Western-friendly countries in the region need support and help. They represent today one of the major areas of opportunity, with a unique potential of human resources, transit lines, energy resources, and communications between Europe, Central Asia, and the Far East.

The lack of an effective Eastern strategy may introduce different types of economic, energy, societal, and political threats to Europe. These may include, but are not limited to: disruptions in energy and other supplies; disruptions in access to the markets for European goods; terrorism; and transnational crime. At the same time, an improved understanding of the region's economic security will help resolve some existing conflicts and prevent many future ones. Europe needs to employ generally pro-active policies toward the Central Eurasia region, which should include:

- Easy entry to the EU for products from the Black Sea/Caspian Region will boost trade, prevent large-scale migration to Europe from those countries, and create economic opportunities and interdependencies between the regions.
- Active European trade and investment policies in Ukraine, the Caucasus and Central Asia, utilizing European export-support agencies and funding institutions, to boost sales of European products and services in the region, and to increase engagement of the regional cheap labor force.

⁹⁹ European Council, Presidency Conclusions, Brussels, 14 March, 7652/08 REV 1, CONCL 1, 2008.

Focusing predominantly on outsourcing some of the industrial and other non-competitive European jobs, vs. importing labor to the EU countries (which may, nevertheless, be inevitable to some extent) may cause much greater positive political and societal consequences for both Europe and the countries of Central Eurasia.

- Promotion and political and financial support for Trans-Caspian and Trans-Black Sea energy infrastructure to ensure alternative energy supplies to Europe from the Caspian region via two major routes: a) Eastern Caspian-Azerbaijan-Georgia-Turkey, to Europe, for natural gas and oil, and b) Eastern Caspian-Azerbaijan-Georgia-Ukraine, to Europe, for mostly oil. The EU needs to sponsor the comparative analysis of the different options of the natural gas supply, including commercial dimensions and impact on prices for consumers. The new Nord Stream pipeline in the Baltic Sea, if constructed, will substantially increase the retail price of Russian natural gas, due to a need to recover the planned \$18 billion investments. The suggested analysis will show how much European customers have to pay for the gas delivered from different sources and will help decision-makers to identify the appropriate strategy.

4.3. Turkey's role in the European energy security

Turkey's geographical position as a bridge between Europe and eastern energy producers makes it indispensable in any energy diversification strategy of the EU, especially concerning natural gas. It could help the EU to bring stability to the Middle East, the Caspian and the Caucasus and it could add to the EU's energy security by acting as a bridge to the resource-rich regions in its neighborhood. Turkey's development as a European energy hub looks natural, given its lucky location between countries that harbor 70 per cent of the world's oil and gas reserve to its east, north and south, and one of the world's biggest energy markets in the west.

With the completion of the Baku-Tbilisi-Ceyhan pipeline (BTC) and South Caucasus Pipeline (SCP), Turkey already fulfills an important function in this regard. However, Turkey is also subjected to Russian energy leverage, especially after the completion of the Blue Stream gas pipeline. This in several ways prevents Turkey from pursuing independent energy policies, and could potentially allow Russia to threaten EU diversification strategies involving Turkey.

In light of its current dependence on Russian energy, Turkey itself faces a need to diversify its energy supplies. However, consolidating its current political and economical relationship with Russia also holds several advantages, especially if Russia would allow for increased amounts of its gas to be re-exported through Turkey.

This would further diminish Turkey's room for maneuver in energy politics, in all likelihood threatening EU strategies for diversified energy imports from the Caspian region, as Russian-sponsored alternatives would remove the rationale of Nabucco and other diversification projects.¹⁰⁰

Turkmenistan and other gas producers want access to new markets, but without alienating Russia. Turkey and the EU could benefit a lot from working together in the energy field. The EU would gain a reliable alternative supply route. Turkey would gain transit fees and other energy-related business and, perhaps more importantly, the opportunity to prove that it is an indispensable partner for, and eventually part of, the European Union. But at the moment, the fact that Turkey is a candidate for EU accession appears to hinder rather than help EU-Turkey energy co-operation. Even technical co-operation becomes politicized because non-

¹⁰⁰ International Energy Agency, *the European Union*, IEA Energy Policies Review, OECD/IEA, Paris, 2008.

energy related issues tend to intrude. So the EU and Turkey need to work out a more strategic plan for collaborating in energy. Otherwise Turkey's potential as an energy hub may well be wasted. Like in most countries, Turkey's energy policy is driven by domestic needs. And these are pressing.

Power demand in Turkey is growing faster than anywhere else in the world, according to the country's energy minister. He estimates that the electricity sector alone will need \$100 billion in new investment by 2020. As the government is still struggling to reduce its debt, much, if not most, of this money will have to come from the private sector. However, a lack of market opening and tightly controlled energy prices have long put off potential investors. Although plans for new power plants, wind farms and even a nuclear power station are now being worked out, these will take time to materialize. In the meantime, blackouts seem almost inevitable. If they persisted, they could do serious damage to Turkey's fast-growing economy.

In spite of this energy thirst, Turkey is clearly in a situation of energy insecurity since only around 30 percent of its total energy demand is being met by domestic resources, while the rest is being satisfied mainly through imports of oil and natural gas. However, if economic reforms and growth continue, growing national demand for energy will force Turkey to invest in energy production and distribution. Turkey is not rich in oil and gas reserves, and until recently, the country's domestic potential in hydraulic, geothermal, solar, wind, and other renewable energies had been underutilized. Turkey's first nuclear reactor, requiring 60 percent domestic ownership by law, should be operating by 2013, and would meet 5 percent of the country's energy demand. All this will not change the fact that Turkey is and will continue to be overwhelmingly dependent on energy imports for the foreseeable future. 90 percent of oil consumption and almost all natural gas consumption are met by imports.

Turkey is geographically bounded by one of the world's biggest energy markets, the European Union, to its west. This location provides opportunities for Turkey to secure its own energy demands in an advantageous way, and to become an energy bridge between producers to its east and markets to its west. This is becoming all the more relevant to European energy security, given the decline of European domestic production, in conjunction with rapidly growing demand (particularly of natural gas), which puts EU member states in danger of becoming even more dependent on crude imports from the Middle East and gas imports from Russia. Russia's increasingly reckless foreign policy has heightened European concerns regarding energy security, spurring a quest for alternative gas supplies.

The Caspian region and the Middle East play a crucial role in this context, because they constitute the only potential suppliers capable of serving as key producers for alternative sources of European gas deliveries.

With its strategic location, Turkey plays a crucial role as a natural “Energy Bridge” in plans to transport Caspian and Middle Eastern energy resources to Europe. The main pillar of this emerging reality is the ‘multiple pipelines’ strategy developed by the U.S. Government in the mid-1990s, with the support of its allies, in order to promote the flow of oil and gas westwards from the Caspian region through Turkey. Without either being a huge market in its own right or having rich energy resources, Turkey has succeeded in becoming an active player in the geopolitics and economics of Eurasian energy by relying on pipelines that would transit the Turkish mainland. Since the selection of pipeline routes confers political muscle on those who have them, pipeline politics is the most important factor for Turkish decision makers in the politics of energy.

The general understanding is that control over oil and gas pipeline is at least as important as possession of oil and gas resources, because whoever controls the lifeline of transportation in fact controls the energy resources.

Fig. 19 –Turkey: Current Cross-Border Oil and Gas pipelines



In order to soften its dependency on imports, Ankara has undertaken a number of major infrastructural projects.

▪ **The gas conundrum:** Turkey’s own oil and gas reserves account for only a tiny fraction of its rapidly rising demand. So as global oil prices have risen, Turkey’s bill for energy

imports has spiraled, to more than \$30 billion in 2008. While Turkey gets oil from a variety of sources, 60 per cent of its gas needs are met by just one supplier: Russia's Gazprom. So Turkey is keen to maintain good relations with Russia. But at the same time it is exploring ways of lessening its dependence on Gazprom. Turkey's demand for natural gas has grown more than three-fold in the last decade. Scant rainfall in recent years has forced power stations to rely more on gas rather than hydropower, of which Turkey usually has plenty. At the moment, Turkey is not short of gas. On the contrary, the long-term contracts that it has signed with Russia, Iran and other suppliers commit it to buying more than it actually needs. This leaves it potentially liable to pay penalties for breaching these contracts. So Turkey needs to build infrastructure for storing gas, for re-exporting surpluses to the EU and, most importantly, to distribute the gas imports around the country so that factories and households can use it.¹⁰¹

However, Botas, the state-owned gas company, has little money for investment. On the contrary, it has piled up more than \$8 billion in debt, as gas import bills have risen (gas prices tend to follow oil prices up and down). At the same time, electricity price caps have made state-owned power stations and municipalities unwilling or unable to pay for the gas they use. The cash crisis has made the government reluctant to follow through on pledges to subject Botas to more competition at home. In principle, Botas is obliged to reduce its domestic market share to 20 per cent by 2009. In practice, it keeps a tight grip on imports and distribution. The Turkish government has been making encouraging noises about energy market reform. Investors, however, will remain cautious after so many years of muddle, delays and reversals. Independent power producers that tried to enter the market in the past have struggled with tariffs that were set too low for them to recover their costs. The EU's energy market laws – which Turkey will eventually have to put in place before it can join – would be an ideal framework to give investors much-needed certainty. However, as explained later, accession preparations in the energy sector are stuck because of political disagreements.

Turkey has ambitions to become a major Eurasian energy hub. Better connections with supplier countries and energy consumers would not only increase Turkey's geopolitical standing. They would also bring lucrative business, in the form of transit fees or through new refineries, LNG terminals and trading facilities. And they could make it easier for Turkey to diversify its own energy supplies and to re-export any surplus gas it may have. In many ways, Turkey already fulfils the role of an energy hub. It does so through the Bosphorus strait and

¹⁰¹ Roberts, J., 'The Turkish Gate: Energy Transit and Security Issues', Working Paper 11, CEPS, October, 2004

through several new pipelines that links it to Russia and the Caspian. Every year, some 10,000 tankers pass through the Bosphorus strait, which connects the Black Sea with the Mediterranean. Traffic keeps growing rapidly, and today a tanker maneuvers through these narrow, busy waterways every 20 minutes during daytime. Although Turkey has spent billions on high-tech navigation systems and other safety features, maritime experts say that it is only a matter of time before one of them spills its toxic cargo. This would be a disaster for Istanbul's 13 million residents. And a big headache for the transporting companies that run up costs of tens of thousands of dollars for every day that one of their tankers' crossings is delayed.

Turkey and the other Black Sea countries have been looking at a number of bypass options. So far, only one – a Russia-backed pipeline from Bulgaria's Black Sea port of Burgas to the Greek port of Alexandroupoulos – is under serious consideration. Other projects, such as Turkey's preferred option of a line running north south across Anatolia, will only stand a chance of being built if sufficient supplies can be guaranteed. Turkey only levies very limited charges on tankers transiting the Bosphorus. So there is little incentive for the oil companies to invest in an expensive bypass pipeline.

Nevertheless, Turkey has the potential to become an important hub for oil and gas transported through pipelines. Some important connections are already in place:

- **Blue Stream for Russian gas:** The 'Blue Stream' gas pipeline from Russia snakes along the bottom of the Black Sea and resurfaces in the Turkish port of Samsun. Opened in 2003, Blue Stream was due to deliver 10 billion cubic meters of gas in 2007, with its full capacity of 16 billion cubic meters scheduled to be reached in 2010. Russia has been exploring the option of doubling Blue Stream's capacity, to 32 billion cubic meters a year, with the aim of selling the gas on to Europe – and perhaps forestalling the Nabucco pipeline through which the Europeans want to import Caspian, Central Asian and perhaps one day Iranian gas without crossing Russian territory (of which more later).

- **BTC for Caspian oil and gas:** Turkey's profile as an energy hub rose considerably with the opening of the Baku-Tbilisi-Ceyhan (BTC) oil pipeline in May 2006. The US had been pushing hard for BTC, as the first pipeline specifically designed to export Caspian oil without going through Russia. BTC can transport 1 million barrels of oil a day from Azerbaijan via Georgia to the Turkish port of Ceyhan. Alongside BTC runs the Baku-Tbilisi-Erzurum (or South Caucasus) gas pipeline through which Turkey imports gas from Azerbaijan.

The BTC pipeline made Turkey an important energy hub for Europe, since Azerbaijani oil transported through the pipeline is imported mainly to Italy by tanker after being processed at the Turkish Mediterranean Ceyhan terminal.

- **The interconnector to Greece:** The recently completed ‘interconnector’ pipeline between Turkey and Greece will for the first time allow the delivery of Caspian gas to Europe without crossing Russian territory. In its current shape, the interconnector will transport only limited amounts. But there are ambitious plans to link it to a mooted Greek-Italian sub-sea line and boost its capacity.

- **Links to Iran and Iraq:** Turkey also has smaller pipelines to import oil from Iraq and gas from Iran, although both have been used only intermittently in recent years. Limited amounts of gas come from Algeria and Nigeria through an LNG terminal on Turkey’s Mediterranean coast. And Turkey would like to add Egypt to the list of its gas suppliers, although it is not yet clear whether this will make commercial sense. If all the oil and gas pipelines that are currently under discussion were built, Turkey would see 10 per cent of global oil exports and up to 15 per cent of global pipeline gas deliveries go through its territory.

Turkey’s plans for becoming a major energy hub tally with the EU’s need to find new suppliers of, and routes for, oil and gas. The EU’s gas needs are forecast to rise by a quarter by 2050. And because gas fields within the EU are being depleted, the share of gas imported from outside the Union is expected to rise from around half today to as much as 80 per cent by 2030.

At present, around a quarter of the EU’s gas (or 40 per cent of imports) comes from Russia. The EU never worried much about its dependence on Russian gas – until January 2006, when Gazprom temporarily cut off supplies going through Ukraine. As the pressure dropped in gas pipelines in Hungary, Austria and other EU countries, the Europeans launched into a panicky debate about how to secure their future energy.

Even those who do not worry that the Kremlin may one day use gas as a political weapon against EU countries are increasingly concerned about persistent underinvestment within Russia. Any growth in Russia’s gas output is gobbled up by a fast-growing domestic market. Although this is already limiting Russia’s export capacity, it has ambitious plans to sell more energy to China, Japan and the US.

Russia is bound to remain the EU’s single biggest gas supplier for decades to come. But the Europeans want their additional future demand to be met by a broader range of other producers. So when the European Commission published its energy policy package in January 2007, it put the diversification of sources of supply right at the top of the priority list. The

Caspian and Central Asian regions are central to the Commission's diversification plans. Although exploration is still at an early stage, analysts say that the region contains 4-5 per cent of global oil and gas reserves. It also offers Western oil majors reasonably good access, in contrast to the Gulf States and (increasingly) Russia, which prefer to exploit their natural resources through statecontrolled companies.

Until now, Europe has only been able to import gas from Central Asia and the Caspian via Russian territory (the Turkey-Greece interconnector breaks this monopoly, but the quantities are small so far). Gazprom, Russia's state-controlled gas giant, has a monopoly over all gas pipelines, which turns gas imports from other countries into Russian gas at the border. This set-up provides the Kremlin with political clout and Gazprom with windfall profits: it buys Turkmen gas for \$100 per 1,000 cubic meters and sells it to Europe at 2.6 times that. For Russia, the transport monopoly will get more important if and when its own gas production falls short of domestic and European demand. It could then use Turkmen and other Central Asian gas to make up for shortfalls – but not if these countries have good alternative outlets.

The Europeans have been exploring various options for accessing Central Asian and Caspian energy without relying on Russia. The Turkey-Greece interconnector is a small first step. But the project that could make a bigger difference to Europe's energy security, and to Turkey's role as an energy hub, is Nabucco. This 3,300 kilometre pipeline would run from eastern Turkey via Bulgaria, Romania and Hungary into Austria. Once it reaches full capacity, it could transport 31 billion cubic meters of gas to the EU every year. Critics say that this would be insignificant compared with the EU's overall gas needs, and with the amounts that it is still likely to buy from Russia. But for John Roberts, an energy expert at Platts, the doubters are missing a point.

He argues that the mere existence of an alternative supply route would strengthen the EU's hand in negotiations with Russia, and thus force Gazprom to sell gas on a more competitive basis. "If Nabucco prompted Russia to drop its prices by as little as \$1 per thousand cubic meters" he claims, "then – even if not a single cubic meter of gas ever flowed through Nabucco – it would provide a good return on its \$5 billion investment."¹⁰²

Nabucco would not only be good for European consumers. It is also a test case for the EU's emerging energy policy; an important ingredient in Turkey's plan to expand its role as a

¹⁰² Cohen, A., *Dealing with Russia*, September 9, 2008

Eurasian energy hub; and a priceless opportunity for the EU and Turkey to prove that co-operation and integration are good for both sides.

However, the planned pipeline has suffered from setbacks and delays. The potential start of construction has already been pushed back from 2007 to 2009. And even in the best-case scenario, gas will not start flowing before 2012.

The basic dilemma is this: international gas pipelines are expensive to build. So they usually involve a long-term agreement between the gas supplier and the consumer, to make sure that enough gas flows through the pipeline over the years to pay off the initial investment. Nabucco is different in that there is uncertainty at both ends. The demand side seems rather more secure: a third of the Nabucco gas would be bought by the countries that lie along its route. The rest would flow into Baumgarten, a gas trading hub in Austria. From there it could be fed into existing EU pipelines to Germany, Italy and elsewhere. On the supply side, however, there is real uncertainty. Nabucco's gas would come from Azerbaijan, and possibly Turkmenistan, and maybe one day Iran and Iraq too. Because of this uncertainty, it is not the ultimate suppliers and buyers that are planning the pipeline but a consortium of companies from the transit states.

The consortium members will only put up the money to build the pipeline if they can be sure that it will be filled in the future. But a lively game of political and pipeline poker has aggravated existing doubts about potential supplies.

Nabucco's gas would initially come from Azerbaijan, namely from the giant Shah Deniz field in the Caspian Sea. But this development has been much slower than initially expected. And, having been embroiled in a struggle with Gazprom over the price of Russian gas deliveries, Azerbaijan will now need more of its gas for domestic industries and households. It has also promised to help neighboring Georgia, which, after a similar disagreement with Gazprom, also needs more non-Russian gas.

Shah Deniz will produce enough to feed the new Turkey-Greece interconnector, but not to get Nabucco up and running by 2012. Some experts say that Nabucco will have to wait until Shah Deniz goes into its second phase of development, expected around 2013. The companies involved in the Nabucco project are confident that Azerbaijan will produce enough gas to make Nabucco viable. But some independent energy analysts warn that other sources would be needed to fill Nabucco in the long term.

Additional gas could come from Turkmenistan and Iran but both have big problems as potential suppliers. Iran has the world's second biggest gas reserves after Russia. However,

their exploitation has been held up by domestic political wrangles, misguided investment policies, and the threat of US sanctions against any foreign company that invests more than token sums in the Iranian energy sector (although these have not yet been enforced). In 2007, Turkey's Botas signed a memorandum of understanding with Tehran for investment of up to \$3.5 billion in a giant gas field called South Pars, and for shipping Turkmen gas through Iran into Turkey. The US administration called the move "unwise" at a time when Washington was tightening economic sanctions on Iran to prevent it from proceeding with its alleged nuclear weapons programme. By investing in Iran, Ankara would risk a renewed deterioration in its relations with the US, recently strained over attacks in Turkey by PKK terrorists based in northern Iraq. If Iran is not a near-term option, this leaves only Turkmenistan as an additional major non-Russian supplier for Nabucco. Turkmen gas reserves are big. But just how big remains an issue of contention because the government has never allowed an independent assessment of its resource base. What is known is that a lot of the gas that Turkmenistan will produce over the next 20 years is already committed through long-term contracts that the country's late dictator signed with Russia. To reinforce this dependence, Vladimir Putin, struck a preliminary deal in May 2007 with his Turkmen and Kazakh counterparts to build a new gas pipeline from Turkmenistan through Kazakhstan into Russia. If this agreement was implemented, most future Turkmen gas would continue to flow northwards into Russia, rather than westwards towards Turkey, and from there to the EU¹⁰³.

But Turkmenistan's new president, Gurbanguly Berdymukhammedov, appears reluctant to tie his country's energy future to Russia alone. He is eyeing the fast-growing Chinese market; and he has expressed an interest in reviving long-standing plans for a trans-Caspian pipeline. Such a pipeline would ultimately be needed to feed Turkmen gas into Nabucco. Shipping it with tankers across the Caspian looks possible but would probably be very expensive. However, Moscow insists that a trans-Caspian pipeline cannot be built as long as Russia disagrees with Iran and the other littoral states about how the Caspian seabed (and the resources underneath) should be shared. Russia has shown little interest in an early resolution. On the contrary, Moscow has done everything in its power to prevent Nabucco from being built. For much of 2007, it looked as if Russia was succeeding through a series of shrewd moves in which it has tried to prize the Nabucco investors out of the consortium one by one:

¹⁰³ http://ec.europa.eu/energy/infrastructure/tent_e/ten_e_en.htm

▪ **Blue Stream extension through Hungary:** Austria would be the main distribution centre for the gas arriving through Nabucco. So Moscow has cleverly promised Hungary that it, too, could become a European gas hub, provided it chose to back an alternative project, namely the extension of the Blue Stream pipeline from Turkey into the EU. Since parts of this extension would run along the same route as the planned Nabucco pipeline, it could easily render the latter superfluous. Although Hungary's oil company MOL is part of the Nabucco consortium, in March 2007, the country's prime minister, Ferenc Gyurcsány, came out in support of the Blue Stream extension. Nabucco, he said, was "a long dream and an old plan"; at least the Blue Stream extension had a chance of being built, he added.

▪ **OMV's tie-up with Gazprom:** The fact that Hungary's MOL has been trying to shake off a take-over bid from Austria's OMV has not helped the consortium's cohesion. Nor has some perceived uncertainty over OMV's own role. The partly state-owned gas company remains the main driving force behind Nabucco. But in May 2007, it announced a joint venture with Gazprom for extending Baumgarten's storage and distribution capacity. Although OMV insists that this project has nothing to do with Nabucco, some took it as a sign that the Austrians were secretly hoping that Russian gas could fill Nabucco, if other supplies did not become available. Other consortium members are not enthusiastic about this idea, arguing that the whole purpose of Nabucco is to make the EU less dependent on Russia.

▪ **Italy and the South Stream plan:** Hungary and Austria were not the only countries to be courted by Russia. In June 2007, Gazprom announced that it would team up with Italy's ENI to build the „South Stream” pipeline from the Black Sea, through Bulgaria, the Balkans and into Italy. Coincidentally, South Stream could supply some of the same markets as Nabucco, again fuelling doubts about the latter's commercial viability. South Stream would also make it less likely that Gazprom gas would be available to make up for any shortfalls in Nabucco, should the consortium members decide to involve Russia.

Having spent a couple of months watching Russia always being one step ahead in the pipeline poker, the Nabucco members decided to pull together again. In September 2007, Hungary's prime minister said he remained committed to Nabucco after all. Germany's RWE and Gaz de France announced that they were both interested in joining the consortium, which would add much-needed financial muscle, as well as access to these companies' big home markets.

The EU has also stepped up its support for the project, which it has included in a shortlist of four 'priority projects' under its common energy policy. The EU paid for the initial

feasibility study on Nabucco in 2004. It has offered financing from the European Investment Bank and possibly the European Bank for Reconstruction and Development; and in September 2007, it appointed Jozias van Aartsen, a former Dutch foreign minister, as special co-ordinator for the Nabucco project.

While the EU side now looks a little more united and determined, problems persist on the Turkish side. At present, Turkey does not allow foreign companies to use Botas' pipeline network. With regard to Nabucco this means that Turkey would buy gas from Azerbaijan (and Iran and Turkmenistan), transport it across its territory and sell it on at the border with Bulgaria. The other companies in the consortium (and the EIB) say that they will only invest in Nabucco if Turkey moves to a different regime which would allow the ultimate customer (say, Germany's RWE or Austria's OMV) to buy the gas directly from Azerbaijan and pay Turkey, and the other countries along the route, a fixed fee for using the pipelines on their territory. The consortium members say that relying on Botas to transport the gas would entail too much commercial and political uncertainty. In Ukraine, a similar transit regime has brought huge profits for murky intermediaries and encouraged political corruption. Moreover, some in the EU think that leaving Turkey with such strong control over EU gas imports is not a good idea, especially as the enlargement negotiations are not going as well as they should.

EU law requires all member-states to open their pipelines for companies from other countries. Although Turkey has implemented certain parts of the *acquis* under its 1995 customs union agreement with the EU, its alignment with EU rules for the electricity and gas sectors is limited.⁸ The EU is now trying to persuade Turkey to align itself with the energy *acquis* through joining the Energy Community Treaty (ECT).

The ECT, signed in October 2005 and in force since June 2006, is aimed at creating an integrated energy market in potential accession states on the basis of the *acquis*. All the Balkan states have joined the initiative. But Turkey has so far contented itself with observer status. The EU argues that Turkey would benefit from full membership through a more open and predictable investment climate in its energy sector; by gaining access to EU expertise and new funding options (for example from the European Investment Bank or Germany's KfW, a state-controlled investment vehicle); and by giving Turkey a say in the EU's external energy policy, so allowing the two to co-operate in the Caucasus and Central Asia.

Turkey says that there are technical problems with some of the ECT's provisions. But more fundamentally, it does not like the idea of unilaterally signing up to a big chunk of the *acquis* without being able to ask anything in return. Turkish officials say that such an

arrangement may suit countries that are not eligible for membership. But Turkey is already an EU candidate and it does not want to be fobbed off with what it sees as a 'privileged partnership' in the energy field.

EU officials never tire of stressing that the ECT has nothing to do with accession, and that one does not prejudge the other. They point out that two of the original ECT signatories, Bulgaria and Romania, have joined the EU, and a third one, Croatia, is well on its way. But Turkey has a point when it says that it wants the EU energy *acquis* as part of its accession negotiations, not as part of some alternative process that is also available to countries that have not yet achieved official candidate status. The fact the EU is now offering the ECT to Ukraine and Moldova as part of its neighbourhood policy has only reinforced Turkey's argument.

Ankara says that it is ready to go ahead with accession negotiations in the energy sector. It has finished the 'screening' of its energy laws against the *acquis*, it has prepared its negotiating position and it has received a go-ahead from the European Commission. Unlike in most other parts of the *acquis*, energy does not have 'opening benchmarks' (steps that Turkey needs to take before the talks can begin in earnest) so the negotiations could start in principle. The main reason why they have not is that Cyprus is blocking them because it objects to Turkish plans to look for oil near its coastline. The energy talks are also being held hostage to the wider debate surrounding Turkish accession, in particular Nicolas Sarkozy's reluctance to let accession negotiations progress until the EU has set up an expert group on the future of Europe.

Some EU officials say that energy is too pressing an issue to wait for the accession talks to make progress. They add another argument for decoupling energy from the enlargement process, namely that Turkey should not be allowed to use its strategic location to get concessions from the EU. This, they fear, could set a dangerous precedent: once Nabucco and other energy links are in place, Turkey could try to use them to get ahead in negotiations with its EU partners in unrelated areas.

Such fears are probably overdone. They certainly should not be used as an argument for not opening the energy chapter. If the EU is serious about the diversification of its energy supplies, it needs to do its utmost to unblock the accession talks in this area. Cyprus will hopefully take a more co-operative stance after its presidential election in February 2008.

The EU should continue prodding Turkey to improve the investment climate in its energy sector and thus make it easier to attract funding. And it should systematically include Turkey in developing its energy strategy, not only on diversification but also on energy foreign

policy more generally, as well as on plans for energy efficiency, renewables and so forth. Ankara, in turn, must do more to prove that it is looking for a genuine energy partnership with the EU, rather than mere short-term political advantages. It could do so by showing how it fits in with the EU's emerging energy policy: it could explain how its own plans to liberalise electricity and gas markets fit those of the EU. It could outline its contribution to the EU's plans for building a strong post-Kyoto regime for fighting climate change (Turkey did not sign up to the original Kyoto protocol). It could align its own ambitious plans for reducing energy consumption with the EU's plan to raise energy efficiency by 20 per cent by 2020. And it could highlight the contribution it could make to the EU's ambition to increase the share of renewable in total power consumption to 20 per cent by 2020. Many Europeans would be surprised to learn that Turkey already gets 12 per cent of its energy from renewable. With the right policies, it could become one Europe's leaders in geothermal energy and hydropower, and it has lots of unexploited potential in solar and wind power.

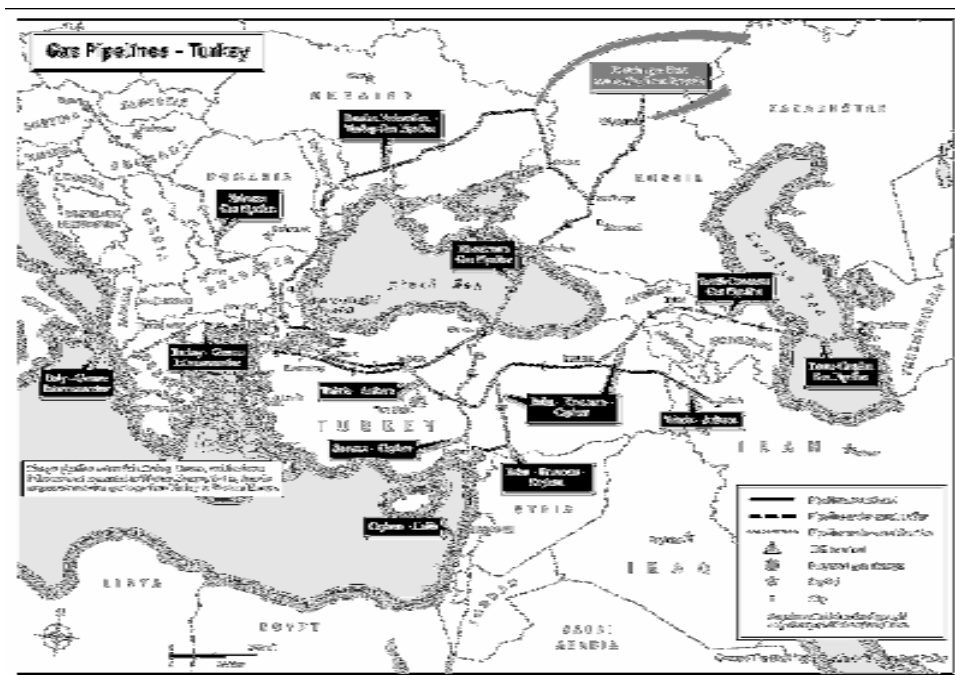
Fig. 20 – Supply potential of EU via Turkey

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

Turkey's transit role and its position in European energy security is also related to the nature of the gas contracts it has signed with partner states. Turkey's transit role in European energy security will depend on whether or not it can re-export the gas that it imports from other sources. Turkey has the right to re-export gas from Azerbaijan to other European customers. On the other hand, agreements for the purchase of Russian and Iranian gas lack resale clauses. This might not constitute a significant problem with regard to the eventual onward selling of Iranian gas, since Tehran is eager to see its gas enter European markets via Turkey. Russia, however, is opposed to the Turkish resale of Russian gas to European markets.

Turkey's accession to the EU will only make progress if both sides keep reminding themselves of the benefits that deeper integration and closer co-operation would bring for both sides. Energy is an area where early gains are available. The fact that Turkey is negotiating for membership should help, not hinder, progress in this area. The evolving nature of the EU's energy policy gives Turkey a great opportunity to make sure that its own energy policy contributes to Europe's energy security.¹⁰⁴

Fig. 21 – Gas pipelines in Turkey



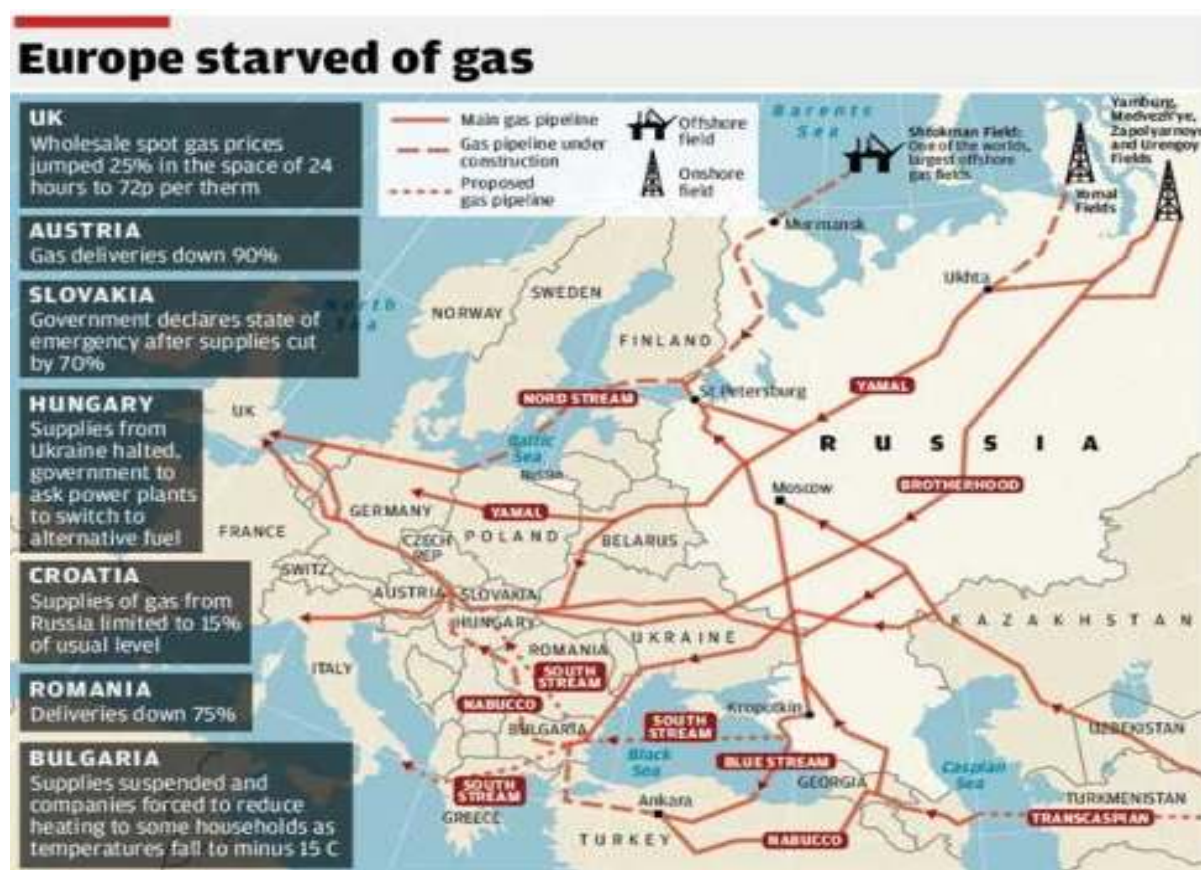
¹⁰⁴ European Commission, 2008

4.4 EU Gas and Ukrainian Reality

“A strange game: the only way to win is not to play”¹⁰⁵

On January 11, 2008, on the eve of the NATO summit meeting in Bucharest, the Ukrainian president, prime minister, and parliamentary speaker wrote to Secretary General Jaap de Hoop Scheffer, asking that Ukraine be invited to begin a Membership Action Plan (MAP) leading to membership in the Alliance.¹⁰⁶

Fig. 22



In April, the NATO heads of state deferred the issue of MAP for Ukraine, and fellow aspirant Georgia, saying that progress should be assessed at the December 2008 NATO

¹⁰⁵ The quote comes from 1983 movie “War Games”, in which a computer-obsessed teenager averts World War Three by teaching a US missile-control computer the impossibility of winning a nuclear conflict.

¹⁰⁶ Press Office of President Viktor Yushchenko, “Joint Address to NATO Secretary General”, January 11, 2008,

ministerial.¹⁰⁷ In that same month, after a tumultuous year of political recriminations and policy deadlock within the ruling coalition, Ukraine is also scheduled, to have its third pre-term parliamentary election in three years. These events shine a harsh spotlight on the current policymaking environment in Kiev, and also on the country's longstanding aspiration to join the Euro-Atlantic community. At present, Ukraine is caught between the old, post-Soviet world and the new, European one that it says it wants to join. Nowhere is this clearer and more consequential, both for Ukraine and for the Euro-Atlantic community, than in Ukraine's natural gas industry.

While Ukraine plays a critical role as the key transit connection between gas producers in Russia as well as Central Asia and gas consumers in the EU, its incomplete market economic transition and culture of corruption weaken its own energy security, destabilize its economy, destroy public trust in its politics, and undermine the interests of its European neighbors as well.

Worse yet, Ukraine's leverage in the energy marketplace is eroding rapidly. A Ukraine that modernizes the practices in its energy sector can contribute significantly to European security, stability, and economic prosperity. Yet, this is not the role that Ukraine has played since 1991 and, even most disappointingly, not the role the country has played since the dramatic Orange Revolution brought new leaders to power in 2005. Western leaders who have encouraged Ukraine's Euro-Atlantic aspirations would be well-advised to examine critically the current state of Ukraine's gas sector, its implications for the country's democratic development, and risks for European security as it considers Ukraine's bid to join the trans-Atlantic community in 2009 and beyond.

Ukraine's energy situation is much more complicated and perilous than it should be. The country has a generous endowment of hydrocarbon resources both onshore and offshore in the Black Sea. It has a capable energy workforce, and long experience in the exploration, production, transportation, and refining of oil and gas. Most prominently, it is strategically located and has large-scale infrastructure.

Today, roughly 80 percent of the gas being exported from Russia to Europe crosses Ukrainian territory, roughly 120 billion cubic meters (bcm) per year. This gas originates variously in Russia and Central Asia, and it passes Ukraine en route to European clients who are the best-paying customers of the Russian gas titan, OAO Gazprom. In fact, two-thirds of

¹⁰⁷ Bucharest Summit Declaration, April 3, 2008, <http://www.nato.int/docu/pr/2008/p08-049e.html>.

Gazprom's revenue comes from the sale of gas that crosses Ukraine, which in turn represents more than 20 percent of growing European gas demand. Moreover, Ukrainian gas throughput can be increased by 25 percent, to roughly 150 bcm per year, on a cost-effective basis, with comparatively modest capital investment relative to all other alternatives.

Ukraine also has strategic strength in the form of other energy transportation infrastructure. Its oil pipeline network can transmit roughly one million barrels of oil per day (nearly 7 percent of total demand) to central and eastern European destinations. It also has immense gas storage capacity. The country can store up to 35 bcm of gas (roughly 40 percent of Germany's annual demand) in underground gas storage systems, which are mainly located in the west of the country an ideal occasion for serving European gas customers. Gas storage is a particularly valuable asset because it allows one to match supply, which is basically constant year-round, and demand, which often varies widely due to seasonal changes or other commercial or even strategic factors.

As for its domestic energy production, Ukraine has several hydrocarbon producing provinces onshore and has vast geological potential both on and offshore. Peak historical gas production was 68.7 bcm in 1975 (more than the total consumption of Germany, Italy, and the United Kingdom at that time), compared to the current production level of 20 bcm. Today there are opportunities for enhanced oil and gas recovery from Soviet-era fields plus previously untapped "Greenfield" opportunities, especially in deeper producing zones and in the Black Sea. Industry experts, both inside and outside Ukraine, commonly believe that with improvements in the overall investment climate and with the right changes to the legal and regulatory environment, Ukraine could double its gas production within a decade.

Despite this resource potential, strategic location, and existing infrastructure, the country struggles with energy security. The reasons are an incomplete transition to market economics, chronic underinvestment, and profound opaqueness of policymaking, which fuels corruption. Seventeen years after the break-up of the Soviet Union, the energy economy of independent Ukraine is still frozen in seemingly permanent transition. The structure of the energy sector, particularly of the oil and gas industry, is a cross between a Soviet branch ministry and private interest groups. The state-owned company, NAK Naftohaz Ukrainy, contains many able and knowledgeable professionals but is overly politicized in leadership, overstaffed, mismanaged, impoverished, and operates under numerous fundamental conflicts of interest. For example, one of the company's wholly-owned subsidiaries, UkrTransNafta, operates the country's oil pipelines and is responsible for determining the terms on which

domestic crude oils accepted into the system for transportation, including from private oil companies that have invested in exploration and production (E&P) activities. At the same time, other Naftohaz subsidiaries, some of which have controlling private owners despite being predominantly state-owned, are also in the business of extracting crude oil. Naftohaz's subsidiary UkrTransNafta, therefore, is determining pipeline access for private E&P investors even as they compete with other Naftohaz subsidiaries.

Price signals, the most fundamental element of a functioning market, are also profoundly confused and obscured in the Ukrainian energy sector. For example, in its current form, the gas industry employs multi-tier pricing that reduces incentives to conserve a precious resource and enables flourishing gray market trading. In other words, gas from domestic Ukrainian production is theoretically earmarked for use by residential customers and government-funded organizations at a subsidized price, while higher priced imported gas is meant to be used for industrial consumption. Not surprisingly, this schema is not honored in reality. Politically well-connected individuals and companies use barter arrangements and re-export schemes to profit handsomely while injuring the national welfare. Meanwhile, domestic gas production is depressed by artificially low prices.

Non-transparency reaches its peak in international natural gas trade and transit, where the poster child is the shady middleman, RosUkrEnergo (RUE). The company's role is a political bone of contention in that an entity with no assets, no track record, and no transparency was placed at the very center of the Ukrainian gas economy. Moreover, RUE did not even have to compete for this very lucrative position. It is also important to note that RUE was not the first mysterious middleman to operate in the Ukrainian gas sector.

Similar to its predecessors Itera and EuralTransGaz (ETG), RUE makes a fortune by re-selling gas in Ukraine and in neighboring central European countries which has been imported from, or transported across, Russian territory.

Under the January 2006 gas agreement, Ukraine pays RUE in kind by giving it more than 20 percent of the totaled livered gas, which is 15 bcm of the 73 bcm that were nominally contracted for 2007. The value of the in-kind gas in late 2007 was \$4.35 billion, assuming a gas price of \$290 per thousand cubic meters which was a representative price in central and Eastern Europe at the time.

Today, the value of this gas would be substantially higher, based on prevailing prices for gas. According to numerous press reports and industry rumors, RUE's ample profits flow

into the pockets of well-placed officials in the Russian and Ukrainian gas industries and governmental structures.

The Ukrainian oil and gas sector is dominated, some would say strangled, by parties that control investment decisions and cash flows, but who are not subject to the responsibility of ownership. Typically, company owners must comply with transparent government regulation and must exercise discipline in their operations to deliver financial performance for fear of being rejected by the capital markets on which the company depends. Instead, the parties who control the Ukrainian oil and gas sector use their positions to block development, to extract economic rent, and to pick commercial winners and losers for their personal convenience. For example, only some projects get governmental approvals; only some companies get sought-after contracts. Consequently, control over the sector is a major prize in political contests. When one political bloc is uppermost in national politics, no project proceeds without the blessing of, and benefits for, people connected with that bloc. When that group loses the political upper hand, deals are often subject to renegotiation. At the same time, it becomes the job of each successive political opposition to block all policy proposals, even the sensible ones, because the opposition is not profiting. As a result, few major long-term policy initiatives have been enacted or implemented.

One of the most damaging results of this pattern is chronic underinvestment in the oil and gas sector. Opportunities to raise production, increase efficiency, and improve reliability are lost because short investment horizons dominate. In infrastructure-dependent, capital-intensive, long lead-time industries like oil and gas, such actions severely damage the prospects for progress and development. Consequently, the condition of Ukraine's oil and gas industry continues to deteriorate.

In May 2007, for example, one of the main gas transmission lines near Kiev experienced a failure and exploded. Had the accident occurred in the winter, when cold temperatures hike demand and when all gas pipelines operate at peak levels, the incident could have had a major humanitarian impact.

Instead, it only signaled the risks of underinvestment in operations, maintenance, and upgrades. Ukraine consumes between approximately 60 and 75 bcm annually, which makes it the sixth largest gas consumer in the world, with consumption levels that are completely out of proportion to the size of its economy. Its consumption equals that of all the Visegrad countries Czech Republic, Hungary, Poland, and Slovakia combined. Its energy intensity is not only higher than Western European countries, but it is twice as high, or twice as inefficient, as

neighboring Poland. Ukrainian officials and lawmakers make ritualistic comments about the need to reduce energy intensity, but the extent of real action is very limited.

In the wake of the 2005 Orange Revolution, President Viktor Yushchenko and Prime Minister Yulia Tymoshenko declared high ambitions for energy sector reform, increasing public expectations. Three years later, none of the stated intentions and expectations has been met. Most conspicuously, the gas sector remains as convoluted and impenetrable as ever. In March 2005, Yushchenko declared that gas trade with Russia would be conducted on a cash basis rather than through non-transparent in-kind payments. Yet, no proper negotiation process followed. Throughout the fourth quarter of 2005, tensions over the gas issue grew, and both Russia and Ukraine resorted to the gas equivalent of saber rattling.

The Russians' version of this high-stakes brinksmanship was to threaten to cutoff gas supply to Ukraine. The Ukrainian version was to threaten to stop gas transit to Europe.

On January the 1st, 2006, Russia's Gazprom reduced gas throughput to Ukraine by an amount roughly equivalent to what Ukraine would have been entitled to extract if a contract were in place. In the midst of a bitterly cold winter throughout Europe, Ukraine apparently retaliated by taking unsanctioned gas from the pipeline system. Foreign governments, especially in Europe and the United States, reacted quickly, criticizing the Russian cut-off and calling for the two sides to reach a negotiated settlement. Early on January the 3rd, Russia returned the gas pipelines to normal operations, appearing to concede that it had lost the battle for international public opinion.

On January the 4th, Naftohaz Chairman Oleksiy Ivchenko and Ukrainian Minister of Fuels and Energy Ivan Plachkov announced a new gas agreement with Gazprom and RUE. To those who had been monitoring the mounting crisis, the agreement was as incomprehensible in its logic as it was unprofessional in its form. Regrettably, it also established the pattern for two subsequent years of negotiations. The result of the early 2006 negotiations was unfavorable to Ukraine inasmuch as it gave away the previously-agreed nominal gas price of \$50 per thousand cubic meters and accepted a nominal price of \$95. In exchange for this concession, Ukraine did not receive an agreed pricing formula for future years, which would have removed the opportunity for politically-charged eleventh-hour negotiations. Nor did Ukraine receive agreement on a period for transition to higher prices or a long-term, ship-or-pay volume guarantee from the Russian side, nor any other enforceable contract provisions. Instead, the RUE import monopoly was expanded, and its non-transparent in-kind payment further entrenched.

Late in 2006, under a new government led by Prime Minister Viktor Yanukovich of the Party of Regions, Ukraine accepted a nominal price of \$130 per thousand cubic meters for 2007. Late in 2008, the nominal price rose to \$179.50, again without normal international contract protections. During the same period, both Belarus and Bulgaria successfully negotiated multi-year gas supply agreements with pricing mechanisms and multi-year periods for transition to “European” pricing levels with Russia. Neither of these countries has negotiating leverage comparable to Ukraine’s, leverage which reflects the fact that 120 bcm of gas transit Ukraine annually from Russia to European consumers. For reasons that are inexplicable as a matter of basic negotiating leverage, Ukraine failed to secure self-protection that less powerful neighbors managed to secure with Gazprom.

Ukraine claims to receive gas, while Russia claims to sell gas, at nominal prices that do not correspond with reality. These nominal prices have deceived the Ukrainian public into thinking they were getting a better deal than they are, and have created a disincentive to engage in gas sector modernization, a faulty logic that is based on the fear that Ukraine could not survive economically if it were required to pay European gas prices. False prices and faulty contract compliance also allowed the Russian side to accumulate debt obligations from Ukrainian entities, thus setting the stage for predatory buy-outs by entities with the right connections (whether Russian, Ukrainian, or other).

The mechanism used to mask these false prices is simple. According to the terms of the January 2006 agreement, Ukraine pays a stated price (initially \$95 per thousand cubic meters, then \$130 for 2007, and \$179.50 for 2008) to import up to 58 bcm of gas per year (roughly three-quarters of Ukrainian demand). To receive that volume of gas for domestic use, Ukraine must actually buy 73 bcm of gas, out of which 15 bcm is transferred to RUE for the “service” of delivering the total volume of gas to Ukraine. As a result, the actual price paid by Ukraine is significantly higher than the nominal price, since approximately one of every five cubic meters that Ukraine purchased (15 of 73 bcm) is actually being turned over to RUE, with its beneficial owners pocketing the handsome profits.

In 2007, gas was selling in several central and Western European countries for around \$290 per thousand cubic meters on a delivered basis.⁴ In that same year, Ukraine paid the nominal price of \$130 per thousand cubic meters for 56 bcm of gas that was said to be sourced from Central Asia, and Ukraine paid \$230 for a further 17 bcm that was said to be sourced from Russia. In aggregate, Ukraine paid \$11.19 billion for 73 bcm in 2007. In exchange for that aggregate sum, Ukraine actually received only 56 bcm of gas for its own consumption, making

the price Ukraine effectively paid in 2007 for each thousand cubic meter of the usable gas \$192.93, not \$130. Similarly, the real price in 2008 that corresponds to the nominal price of \$179.50 is roughly \$240 per thousand cubic meters.

For RUE, this arrangement has been exceptionally lucrative. RUE has been able to re-sell at European market value the gas it receives as an in-kind transfer. Certain Ukrainian industrial and export customers are willing to pay close to full value, which means that RUE can pocket literally billions of dollars per year.

The reason behind RUE's preferential place in the Eurasian gas trade has never been explained in comprehensible terms. Gazprom and Russian government officials have always blamed the Ukrainians while the Ukrainians have always blamed the Russians. Nonetheless, the simple fact is that Gazprom allowed billions of dollars of value to flow into the pockets of a group of middlemen without demonstrable industry expertise and without compensating Gazprom's shareholders, or Russian taxpayers, in any commensurate way. And the Ukrainian government and Naftohaz allowed RUE to occupy an absolutely central place in the Ukrainian economy, earning billions from the role, without ever having had to compete for the role or prove its capabilities in any way.

From time to time since 2005, Ukrainian officials have proudly asserted that they have extemporized skillfully, allowing their country to buy time and adjust gradually to higher gas prices. Unfortunately, such claims ring hollow. Three years after the arrival of Yushchenko and the Orange forces, the gas sector is no more transparent than it was in 2004, when RUE's role was more limited. As of 2008, Ukraine still lacks the stability and predictability that would come from long-term gas contracts. Ukraine also lacks the protections that would come from an international-style agreement that includes all the standard provisions that Gazprom routinely negotiates and concludes with its German, French, or central European counterparties* provisions such as take-or-pay obligations for gas buyers, ship-or-pay obligations for shippers, price adjustment mechanisms, clear arbitration provisions, and many more.

Over the past three years, Ukraine's negotiating leverage has eroded greatly. Gazprom is three years closer to its objective of commissioning bypass pipelines that will allow it to transport more of its gas to Europe without having to cross Ukraine. Blue Stream, which passes under the Black Sea to Turkey, is operating at capacity while Nord Stream, which is meant to cross the Baltic to Germany, is proceeding, though not without a number of headaches. And

South Stream, which is planned to pass under the Black Sea to Bulgaria, is now under development. All three of these routes will bypass Ukraine entirely.

Even without these pipelines being completed, Ukraine's leverage is rapidly eroding. Naftogaz's chronic and massive indebtedness it is currently in technical default of its international bond obligations makes Gazprom the only potential purchaser of its remaining valuable assets, namely the trunk gas pipeline and storage facilities. Gazprom's dominant position gives Russia the possibility of taking over Ukraine's decaying infrastructure and strengthening its control over gas exports to Europe, including those from Central Asia, even without having to construct all the bypass pipelines it is planning.

Although gas trade and transit carries the greatest international impact, they are not the only parts of the Ukrainian energy sector that remain distorted and dysfunctional. Domestic production is stagnant to declining at the time when it should be booming. Investment in exploration and production of Ukraine's oil and gas resources, which could have been substantial at a time of historically high international prices and constrained access to new prospects, has amounted to a trickle at best.

The sole international competitive bidding for new development that occurred in this entire period, for the Prikerchenskiy offshore block in the Black Sea, has been a classic case of non-transparency, rent-seeking, and professional incompetence.

First, in 2005, Ukrainian officials deliberately chose not to employ standard marketing techniques that are universally recognized as proven approaches to increase industry awareness of new prospects, and thus increase potential bids from competing companies.

Then in 2006, with the country experiencing political turmoil associated with imminent parliamentary elections, bids were collected under an ill-conceived process, and a small independent American oil company with modest experience in offshore west Africa, Vanco, was announced the tender winner.

In late 2007, with yet another new Ukrainian government about to arrive, the terms of the production sharing agreement (PSA) were concluded and formalized by the outgoing government. The timing struck knowledgeable industry observers as unusual, a long-term deal concluded in haste by a lame duck government just before its departure. Most observers assumed the deal would be overturned by an incoming government, and unfortunately they were proven right.

In May 2008, it was officially revealed that Vanco's Prikerchenskiy investor group includes the Ukrainian firm Donbass Fuel and Energy Complex (DTEK), which is owned by

Ukraine's richest man, Rinat Akhmetov, the force behind the now-out-of-power Regions Party of Ukraine, as well as other mysterious entities whose ownership and expertise have never been revealed. The second Tymoshenko government, in turn, cancelled Vanco's license, allegedly due to problems in the fairness and adequacy of the tender process and license terms, which then led to an open disagreement between Yushchenko and Tymoshenko.

In the summer of 2008, Vanco announced it would take the matter to international arbitration. The deputy head of the presidential secretariat stated to the press: "we do not have the right to revoke the license unilaterally."¹⁰⁸ This entire experience calls into question Ukraine's interest in attracting transparent foreign investment into its upstream oil and gas industry. Despite numerous efforts, no major foreign investor has been able to achieve any success in Ukraine's upstream oil and gas sector, including Royal Dutch Shell and Marathon. The nature of the current investment climate should ring alarm bells in the ears of Ukrainian policymakers along with the leaders of the Euro-Atlantic community. If developing the country's domestic hydrocarbon resources is a priority for Ukraine, as it should be, and if foreign investment is essential to the country's ability to develop those resources in a timely manner, and it is, then it is important to acknowledge that, at present, the investment Currently, Ukraine's oil and gas sector is being operated in a completely dysfunctional manner. Yet, there are several beneficiaries, well-positioned individuals and key political forces, milking the energy sector, particularly the oil and gas industry, for personal enrichment and as sources for political funds.

The present state of affairs underscores the most essential prerequisite for change in Ukraine's oil and gas sector: political will. The needs of the nation, for today and tomorrow, are consistently overridden by short-term political expediency and personal gain, creating a corrosive effect on the entire political system, as it contributes to a broad loss of faith in the political process among the Ukrainian public. The open and free press that has exposed the corruption underlying the oil and gas industry, however, is one of the truly important and hopefully lasting changes after the Orange Revolution.

Today's energy policy, which serves the interests of certain political elites rather than the country, poses imminent danger to the nation, yet it is not being addressed with any sense of urgency. To date, no political faction has demonstrated a willingness to put aside parochial

¹⁰⁸ "Ukraine president suspends cabinet's decision to control top state companies," BBC Monitoring Kiev Unit, May 20, 2008.

interests for the good of the nation, a reality that must be changed if Ukraine is to pursue membership in the Euro-Atlantic community.

As experience around the globe will attest, sound energy policymaking is a difficult task. The United States, and many other political cultures that are far more settled than Ukraine, struggle to make good choices in energy policy.

Effective energy policy requires political leadership, economic analysis, public dialogue, consensus building, commercial awareness, planning, and professional execution, not the enunciation of lofty goals. Energy policy should be based on sound priorities, action plans, intermediate objectives, and realistic timetables.

At present, Ukrainian officials betray a lack of seriousness on energy strategy, which undercuts the ability of commercial and public decision makers to plan energy-related aspects of their future, and reinforces already high public cynicism about the mishandling of the energy sector.

Gas supply and transit, which have been the source of so much controversy and intrigue since Ukrainian independence, must form the core of a sound Ukrainian energy strategy. Ukraine could credibly set the goal of reducing its reliance on imported gas from the current level of approximately 75 percent to 50 percent within the next five to seven years. Achieving this objective would require a range of efforts, some related to domestic supply and some to demand.

On the demand side, there is great scope for helping Ukrainians, particularly those living in multi-family apartment buildings, to simultaneously reduce their gas consumption and improve their comfort as well as quality of life by investing in energy efficiency. Another essential aspect of this initiative would be to reduce gas consumption by allowing gas prices to increase to full-cost recovery levels and by enforcing payment discipline. This is important because allowing the accumulation of gas debts only makes Ukraine vulnerable to highly disadvantageous debt-equity swaps.

In addition to reducing gas consumption, Ukraine could increase its domestic gas production. Eliminating multi-tiered pricing would encourage new domestic production, because domestic production is currently designated for sale to residential and budgetary-institution consumers, but at only a fraction of the true market value. The current practice discourages domestic production and subsidizes higher-priced imports.

For gas transit, Ukraine's goal should focus on stabilizing its contractual relationship with Russia. At present, Ukrainian officials constantly declare that their country is a reliable

transit partner, but a short conversation with virtually any European gas industry executive will reveal that this self-perception does not correspond to the understanding of industry experts outside Ukraine. Nearly seventeen years of post-Soviet experience have taught Europeans that Ukraine is the part of the supply chain that often leads to disputes, mutual recriminations, and endless charges and counters charges. It is the weak link. It is hardly surprising that many Europeans conclude that it is better to pay lip-service to the idea of closer gas-related engagement with Ukraine rather than formulate policies that would lead to such engagement. At present, because of the legacy of Soviet-style gas contracts, Ukraine is Russia's problem to manage. And Europe does not appear to object to this reality.

Ukraine can transform its reputation by developing policies that aim to improve its reliability as a transit partner. A first step would be to engage in a systematic internationally-sanctioned assessment of the condition and investment requirements of the Ukrainian international gas transit system (IGTS).

The assessment could identify opportunities to increase operating efficiency and reduce bottlenecks, serving as the basis for increasing Ukraine's transit revenue by increasing throughput volume, and not by extorting higher transit tariffs as is often proposed by Ukrainian officials. Such a technical audit would be welcome and possibly funded by the donor community. Needed capital improvements can be financed by international credit according to modern business standards.

Ukrainian officials often complain that transit across their country is substantially less expensive than across many other European countries which occupy a far less strategic position in the supply chain, a fact borne out by analysis conducted by the Energy Charter Secretariat, among others. Transit across Ukraine, however, comes with an uncertainty premium that the market is no longer willing to bear. Ukraine would be better advised to build market confidence and increase its transit revenues by increasing volume first and only later by increasing transit fees if such increases can be justified by investments to improve reliability and increase capacity in the Ukrainian IGTS.

To achieve the priorities outlined above, Kyiv can take five steps that will help stabilize Ukraine's energy sector. First, Ukraine should seriously and professionally negotiate with Russia to reach new long-term agreements on gas supply and transit. At this writing, representatives of Naftohaz and the Government of Ukraine continue to negotiate with Russian officials and Gazprom over a future, multi-year gas agreement and a gas price for 2009. Senior officials from the presidential secretariat and the Tymoshenko government continue to use the

gas issue as an attack each other in hopes of scoring political points. This is not only unproductive for the country but is also damaging efforts that aim to improve Ukraine's reputation as a serious and reliable transit country. It is not clear from press reports whether Ukrainian representatives are pursuing a clear negotiating strategy that is informed by expert analysis and supported by duly experienced professionals in fields such as international business practice, law, and finance, or are simply building on old and inefficient policies and practices.

In any case, it is hard to imagine why Russia would agree to a firm contract prior to the upcoming, pre-term parliamentary election in Ukraine. Yet, Ukraine's winter gas supply and Europe's gas imports depend on agreements that expire on December 31, 2008.

Second, Ukraine needs to transform the state-owned company Naftohaz into a functioning commercial concern. Naftohaz dominates the Ukrainian oil and gas industry in the style of a Soviet branch ministry, and consequently simply hemorrhages money. The fact that Naftohaz remains dominant, despite its consistent financial losses, reflects a conscious dual choice on the part of successive rounds of Ukrainian legislators, cabinets, prime ministers, and presidents: first, the choice not to address the utter insolvency of the oil and gas sector and, second, and the choice to engage in asset-stripping and rent-seeking.

Naftohaz is on the brink of bankruptcy due to the absence of necessary and crucial reforms in areas like gas pricing. The company is responsible for buying gas for the needs of Ukraine's population, governments, and some industry, but is unable to collect payment from consumers in amounts sufficient to replace the consumed gas and operate the delivery system. As a result, Naftohaz's finances have reached the breaking point. It borrows expensively in the debt markets, paying a high premium because of its non-transparent business practices and precarious financial position, and uses the funds for current operations instead of capital improvements.

The cycle repeats until Naftohaz is declared to be on the verge of bankruptcy, at which point the government finally steps in and bails out the company, declaring it to be too important to fail. The government then changes absolutely nothing in the way Naftohaz operates, and the whole corrupted process starts over again. Naftohaz received a bailout in early 2008 as the current government entered office but went right back to losing money hand over fist.

By summer, a new bailout was already under discussion, and by early October, a new bailout priced at \$1.7 billion was announced.¹⁰⁹ Unfortunately, there is no reason to believe that the pattern will not repeat itself yet again. To end this vicious cycle, Naftohaz must be subjected to fiscal discipline. It needs to be able to charge its customers nothing less than the actual cost of the delivered fuel. In addition, Naftohaz and all its lenders must be informed that there will be no further government bailouts of the company. Naftohaz's operations must be rid of non-core functions, and inherent conflicts among the various Naftohaz functions must be resolved once and for all. In the long run, the essential functions of energy production, transportation, and distribution will need to be unbundled, consistent with European reform efforts, and with creating a competitive market. In short, Naftohaz must be transformed so that it is no longer a big black hole.

Third, RUE and other middleman firms must be removed. These firms impose a hidden cost not only on Ukraine but also on Russian taxpayers and Gazprom shareholders. RUE also introduces serious risks and instability into the European gas supply chain. In late April 2008, press reports about a possible new Ukrainian-Russian gas deal indicated that RUE was to be removed, with all wholesale gas to be purchased by Naftohaz while independent gas traders would serve the intermediary function between Naftohaz and end users. Depending on implementation, this arrangement could open opportunities for new intermediary companies to establish themselves in the same way as RUE and others did, with all the attendant risks that are discussed above.

Fourth, Ukraine should promote efficiency by reforming pricing and helping consumers use less gas. The danger in multi-tier wholesale gas pricing is that domestically-produced gas, which is nominally designated for public and household consumption, may get sold on the gray market to domestic industrial users or export buyers who are willing to pay European prices. These illicit sales fuel corruption and muffle the market signal that would otherwise promote increased domestic production and decreased consumption. Serious pricing reform is required, based on a sensible, transparent, and easily understandable rate methodology that allows gas producers or sellers to recoup their costs plus a reasonable rate of return.

Price formation will require capable and independent regulators to operate in a publicly transparent fashion so that the interests of producers and consumers are adequately balanced and duly protected. Price reform will mean higher prices all across the Ukrainian economy,

¹⁰⁹ Alexander Bor, "Ukraine Orders \$1.7 billion Naftogaz Bailout," *Platts Oilgram News* 86, no. 198 (October 7, 2008)

which means the potential for negative impacts on the poor, namely those least able to pay higher prices.

In order to lessen the impact on the poor, Ukraine should follow the example of other Eastern and central European countries that have already undergone price reform. Energy efficiency programs can help reduce the energy consumption of residential and institutional buildings as a first priority. Lending programs can be created, expanded, or strengthened to allow Ukrainian industry to borrow money in order to invest in upgrades for plants and equipment. And targeted assistance can be introduced to alleviate the burden on those legitimately unable to pay.

The current system unfortunately operates in the interest of well-connected gas consumers and penalizes the poor who suffer shortages making reform a necessity.

Finally, Ukraine needs to improve its investment climate for exploration and production of hydrocarbons. If natural resource endowments were the only relevant factor, Ukraine would be able to produce significantly greater quantities of oil and gas than it does today. Significant improvement to the business climate, however, is required to attract the investment of billions of dollars needed for serious upstream development. Ukrainian energy legislation and regulation will need to be updated to correspond with norms found elsewhere around the globe. The updated system will need to provide for fair access to geologic data, transparent decision-making processes, longer licensing periods, use of model contracts, and truly competitive tenders. In other words, almost all of today's standard practices, which are optimized for insiders and those paying for inside access, would need to be replaced. This will take time.

Meanwhile, Ukraine will need a success story or a demonstration case that can prove the country's new political will to encourage upstream investment. Ukraine is a country generously endowed with many assets. Its well-educated population of 46 million, industrial and technological prowess, huge agricultural potential, and cultural wealth all make it a natural candidate for the Euro-Atlantic community, if that is the wish of its people. The current form of the country's energy sector, however, needs to be seen for what it is, a major threat to itself and to its neighbors. If Ukraine fails to modernize its energy sector practices, the sector will continue to undermine Ukrainian politics, economy, and energy security. Most importantly, it will threaten Europe's own energy security.

Ukraine has the potential to change this story line. Friendly governments and international institutions can help with capacity building for effective policy execution, but only after the political will for energy reform is in place. Serious energy sector reform would

not only help Ukraine but would also stabilize the economic under girding of all European gas importing countries.

In this sense, serious energy reform would arguably be Ukraine's single most important contribution to improve the security of the trans-Atlantic community. On the other hand, continuing failure to engage in energy reform, when the high stakes are so obvious to all, would be a clear signal that Ukraine is not ready to pursue its stated desire of becoming a more integral part of the Euro-Atlantic community.

4.5. South Stream vs. Nabucco

For Russia, the main purpose of the South Stream gas pipeline project is to prevent Nabucco and TGI from transporting Caspian gas directly to European markets without its involvement. Its main tactics in accomplishing this goal are twofold: first, locking up the markets and keeping out potential competition—which is fairly easy to ensure when Gazprom itself determines the rules—and second, by ensuring a long-term and large-volume gas commitment from Turkmenistan (as well as Azerbaijan, Kazakhstan and Uzbekistan) to its pipelines, thereby preventing a direct Caspian-Europe connection because of a lack of excess capacity.

In 2007, Russia introduced another important gas pipeline project (the ‘pre-Caspian pipeline’) to support this strategy: a pipeline intended to stretch along the Western coast of Turkmenistan to bring those volumes north into the existing Gazprom infrastructure. This pipeline was also conceived as a way to frustrate attempts to bring Central Asian gas westward. It is a direct threat to the ability to bring offshore Turkmen volumes west, which is the real and practical way of supplementing Azeri gas for delivery into Nabucco.

If South Stream goes forward, Nabucco will lose its strategic importance for Baku—and if there is no strategic benefit, then Azerbaijan will not increase gas production in the short term. Therefore, sequencing—that is, the order in which construction begins and supply commitments are reached—is vital. The fortunes of the two pipelines are inversely related.

Baku already receives millions of dollars from its oil sales, and has no need to sell gas to obtain additional revenues. What Azerbaijan *does* need is strategic integration with the EU—otherwise, it would rather leave the gas in the ground than send it to Europe via Russia (which the Russians are trying to get Azerbaijan to do) or to be trapped into selling it all to Turkey.

Therefore, large-scale gas production in Azerbaijan is contingent on direct access to European markets. If Azerbaijan can obtain this, then its gas will flow westward, and Europe will have diversification. If not, then the gas will stay in the ground; Gazprom's pressure on Central Asian producers will increase; and subsequently, westward movement of all gas from Central Asia will take place exclusively through Russian-controlled networks—ensuring that no diversification can happen. (Azerbaijan is expected to supply Nabucco's first phase with 8 bcm; at the second phase, gas from Central Asia will enter the pipeline, while in the third stage, gas from Iraq and Iran, and possibly Egypt, would flow into Nabucco onwards to Europe.)

In other words, South Stream directly competes with Nabucco—the two pipelines target the same markets and utilize almost identical routes. In fact, three of the five countries along Nabucco's route are also part of South Stream's intended route. Yet, out of fear of a potential Russian reaction, European Commission officials, leaders of countries along both pipeline routes, and companies involved with both projects insist that the construction of one will not hurt the other. Two days before the NATO summit, EU Commissioner for Energy Andris Piebalgs made clear once again that he did not believe South Stream and Nabucco to be competitors. Reinhard Mitschek, OMV's managing director of Nabucco has repeatedly made this point over the past few years; as of June, OMV is also a coordinator of South Stream. All of the Nabucco member countries that have also signed up with South Stream have said the same thing publicly—while at the same time privately recognizing that the two are competitors.

In the long-term, giving the rising gas demand in Europe—expected to increase by approximately 300 bcm by 2030—the market can certainly support both of these 31 bcm capacity pipelines—along with Nord Stream, and the increased supplies projected from Norway (Langeled), Algeria (Medgaz and Galsi), and even several new LNG terminals being built or planned throughout the continent. The question, however, is whether Nabucco can be built for Caspian gas, assuming the need to coexist with South Stream. Moreover, as previously mentioned, while the market may be available downstream in the long term, the question is whether there would be enough gas upstream to support all of them for the same time period given that both projects are scheduled to start in 2013.

The answer is no, if South Stream is built first. Nabucco faces a number of financing hurdles even in the absence of South Stream. Investors are uncertain of Azerbaijan's ability to supply Nabucco in time and even more uncertain that a trans-Caspian pipeline will be constructed to bring in the Turkmen gas that many view as necessary for the success of Nabucco. The possibility that South Stream will be constructed and will meet a significant portion of consumer countries' expected short- to mediumterm demand will likely be enough to deter investors away from Nabucco.

From an economic perspective, it is utterly impossible to build a pipeline such as Nabucco—which will cost upwards of €7.9 billion—unless investors are confident that there will be sufficient gas supply and sufficient consumer demand for them to make a profit. The important difference between Nabucco and South Stream is in ownership; Nabucco will be privately financed and therefore needs to be commercially viable, whereas South Stream is backed by state-owned Gazprom, which is perfectly willing to finance projects that do not

make commercial sense so long as they support the strategic goals of Moscow. Unlike Western companies, Gazprom is also willing to use pipelines at minimum capacity—it loses money in the short term, but in the long term, thanks to the disappearance of competition, it will make tremendous profits as a monopolist. Even though Nabucco will be expensive to construct, South Stream—due to the enormous cost of constructing an undersea pipelines spanning virtually the entire breadth of the Black Sea—will be even more so. South Stream gas will by definition be significantly more expensive than Nabucco.

Those who still doubt the crucial importance of sequencing should consider the case of Turkey during the late 1990s, when it was approached with two different pipeline proposals. Turkmenistan, Azerbaijan and Georgia, with strong support from the United States, proposed the construction of a trans-Caspian pipeline that would carry gas from Central Asia to Turkey. Russia, which did not want its monopoly power in Central Asia eroded by the construction of additional export routes, instead proposed a pipeline beneath the Black Sea to Turkey. Supporters of the Russian project, which is now called Blue Stream, insisted that current and future Turkish gas demand was large enough to support both projects. Turkish authorities in 1999 claimed the country would need 60 bcm of gas in 2010, and 80 bcm in 2020, to prevent any opposition to the Blue Stream pipeline; and subsequently, many supporters of Blue Stream claimed the two lines were, ‘not competitive’.

Yet at the time, neither Turkmenistan nor the private investors behind the trans-Caspian pipeline believed these figures to be realistic. (Turkey consumed just over 12 bcm in 1999; the figure rose to 35 bcm in 2007; revised estimates are 44 bcm for 2010 and 66 bcm for 2020) And many of those who disagreed were reluctant to challenge Russia and went along; some also did not think it would actually be built. They referred to this project as ‘Blue Dream’ because of its lack of market viability and the need for never-before-used technology to construct a pipeline deep underwater. These assertions were quickly proven false, however, because interest in the trans-Caspian project dried up as soon as Ankara signed an agreement to build Blue Stream.

In the end, Blue Stream not only prevented Turkey (and the EU) from having direct access to Turkmen gas, but also increased Turkish dependence on Russian gas to over two-thirds of its demand. Since it came on line, the pipeline has operated at less than a third of its 16 bcm capacity while providing the most expensive gas supplies on the Turkish market. It is worth noting that Vladimir Milov, a former deputy energy minister, objected to Blue Stream as

he did not believe it would be in Russia's commercial interest. Yet even though it makes little commercial sense, Blue Stream has been a hugely successful project for the Kremlin overall.

Fig. 23– The Blue Stream Pipeline



The Blue Stream experience was encouraging for Russian leaders; they learned that energy could be an effective tool not only against countries in its ‘sphere of influence’, but also against the West, as it so easily fit into a ‘divide and conquer’ strategy. After all, Russia had managed to pull even America’s long-term NATO ally Turkey into its project—regardless of the fact that Ankara's own declared priority was to serve as a transit country between Central Asia and Europe, thereby also serving its interest in re-connecting with the Turkic-speaking world that had been inaccessible to it during the Soviet period.

Prime Minister Putin became personally involved in major energy projects, meeting repeatedly with the top leaders in each of the relevant European countries, and developing close personal relations with them. One such friendship that has proven extremely useful was that forged with German Chancellor Gerhard Schröder. He became the biggest promoter of Nord Stream as a ‘European project’ even though it would mainly benefit Russia and Germany and actually *divide* Europe by bypassing Poland and the Baltic states. This way, Russia will gain the ability to punish these states by withholding gas from them without jeopardizing supplies to Germany—thus avoiding the negative attention it attracted after the Ukraine cutoff in 2006, which resulted in a domino effect of supply decreases in all countries receiving Russian gas via Ukraine. By creating Nord Stream, Germany has effectively stripped Poland and the Baltic states of the leverage they currently enjoy over Russia as transit countries to

Germany. Not surprisingly, then Polish Defence Minister argued that the project is ‘reminiscent of...the Molotov-Ribbentrop Pact’—the non-aggression pact between Nazi Germany and the Stalinist Soviet Union that led to the division of Poland and the Baltic in 1939.

Nord Stream also demonstrated how Putin and Gazprom have been able to buy influence and legitimacy: Schröder extended a €1 billion government credit guarantee to Nord Stream just prior to stepping down in 2005. Soon afterwards, Schröder became the CEO of Nord Stream. Germany, and especially Foreign Minister Frank-Walter Steinmeier, Schröder's former chief of staff and, like his old boss, a member of the Socialist Party, opposed the MAP for Georgia and has been notably reluctant to take a firm position toward Russia even after the invasion in August. Another example of Russia's ability to simply buy political support in EU states is that of Finland; even as Finnish Foreign Minister Alexander Stubb was shuttling between Moscow and Tbilisi in his capacity as chairman of the OSCE, Nord Stream announced the hiring of former Finnish Prime Minister Paavo Lipponen. Once the Russians saw that Europe did not and likely was not going to stand united, and once Germany signed the Nord Stream deal without even consulting its Polish or Baltic partners, the precedent was set for seeking bilateral deals with other EU member states that could leave out the impact on neighbours and on the union as a whole.

As noted earlier, the easiest option for undermining Nabucco would have been to construct Blue Stream II—which would mean not building South Stream, but instead pushing for the onward transit of Russian gas through Turkey via Nabucco (and TGI). Alternatively, Russia could try first to supply the markets of those countries on Nabucco's intended route: Bulgaria, Romania, Hungary and Austria. All these countries were played against each other, and American and European efforts were undermined at each step.

Below is a brief review of some of the tactics used to coerce or cajole Nabucco countries into also signing up with South Stream. In general, some recurring tactics include: promising significant amounts of investment and turning the country into a ‘gas hub’ for Europe; providing various forms of support to political leaders during election campaigns and then, after they reach office, extracting concessions from them; and working through non-transparent third parties and reaching deals that are hidden from the public. All the countries that joined South Stream insist on the same no means exhaustive or final.

A death blow to Nabucco could be dealt by sealing off its two final markets for its gas: Hungary and Austria. The first target was **Hungary**, which remained close to Russia even after entering EU and NATO. President Bush's long-expected trip to Hungary on 22 June 2006 was

pre-empted by Alexei Miller, who beat the President by a day to Budapest in order to discuss the SEGP. Among other concessions, Moscow promised to supply Budapest with enough gas to make Hungary a major European energy hub.¹¹⁰

Over the next year, as the Americans and the Europeans were distracted with other priorities, Russia moved ahead with firming up Hungary's commitment to South Stream. Western attention was finally drawn to Russia's moves in Budapest following a March 2007 article in the *International Herald Tribune* with the title 'Hungary chooses Gazprom over EU', in which Prime Minister Ferenc Gyurcsany was quoted as saying 'The Nabucco has been a long dream and an old plan...But we don't need dreams. We need projects.' He continued by underlining that 'Blue Stream is backed by a very strong will and a very strong organizational power'. While official reaction was subdued, Brussels and Washington privately expressed concern about these statements, urging continued and strong commitment to the EU's priority project of Nabucco. Subsequently, at a conference held by the European Commission (and hosted by Commissioner Piebalgs) on 14 October, Gyurcsany publicly asserted his support for Nabucco. Yet when Zubkov visited Hungary on 7 December, he secured the Hungarian leader's commitment to South Stream. The final touches were made when Medvedev visited Hungary on 25 February 2008, followed up by Gyurcsany's visit to Moscow three days later on 28 February, when he officially signed the South Stream agreement. Even as negotiations were ongoing with Hungary, Putin and Miller 'diversified' their push against Nabucco by expanding their focus to include **Austria** as well. They travelled to Vienna on 23 May 2007, signing a MoU on South Stream cooperation.

With Austria, the Russian strategy was this: play up the possibility of Austria becoming the key 'hub' for Central Europe (in addition to or instead of Hungary), and at the same time warn it of the prospect of being left out of such major projects; to ensure the best possible transit deal, the Russian side strongly hinted that South Stream could be routed instead via Slovenia—then holder of the EU presidency and hence potentially a useful backer in Brussels.

On 25 January, Alexander Medvedev visited Austria and signed the Baumgarten deal. This represents the biggest victory to date for South Stream, since Baumgarten had already been chosen as Nabucco's end point. Furthermore, in June, OMV agreed to become South Stream's project coordinator—the same key role it plays with Nabucco. Austrian Economy Minister Martin Bartenstein had previously suggested 'integrating' Nabucco with South Stream

¹¹⁰ Mandil, C., *Sécurité énergétique et Union Européenne: Propositions pour la présidence française*, Rapport au premier ministre, Paris, 21 avril, 2008

and filling the former Russian gas. Obviously, such integration would completely undercut the whole point of Nabucco: diversification away from Russia.

A second set of countries that Russia has targeted in order to accomplish its goal of killing Nabucco was those along the transit route between its Turkish beginning and Austrian/Hungarian/Slovenian ending points. Romania and Bulgaria are attractive bypass options to Turkey in terms of geography, and both Black Sea littoral states lie on the Nabucco route. However, under President Basescu, **Romania** has ruled itself out due to its consistent policy of independence from and wariness towards Russia; thus, **Bulgaria** became Russia's next alternative choice for the western endpoint of a trans-Black Sea pipeline connecting Russia directly with Europe. In order to win over Bulgaria as well as **Greece**, the Russian side offered to back the Burgas-Alexandroupolis (B-A) oil pipeline between Bulgaria and Greece that both countries greatly desire. The B-A pipeline was competing with the Turkish Samsun-Ceyhan project for the potential transport of oil from the Black Sea to the Mediterranean; Russia was thus also able to play Bulgaria and Turkey against each other. When it became clear that Greece and Bulgaria were willing to agree to the first Russian-owned oil pipeline in EU territory, US Deputy Assistant Secretary of State Matthew Bryza visited Greece on 12 March 2007—and was followed by Putin three days later. Putin discussed pipeline projects with the Bulgarian president as well.

With little opposition from the EU or from Washington, and with continued strong pressure from Moscow, the Greek government on 17 May signed the B-A agreement, surrendering 51% ownership to Moscow. Bulgaria did the same shortly after. Turkey had hoped Russia's interest in building Blue Stream II might facilitate linkage of that deal to a potentially mutually beneficial partnership on Samsun-Ceyhan. The deal broke when the Russians demanded a controlling share in the latter pipeline, which the Turks did not accept. Greece and Bulgaria, however, consented to the principle of majority Russian ownership—via a holding company to be based in Moscow. On gas also, Russia decided to bypass Turkey with South Stream.

Moreover, by reaching the Greek market first, Gazprom could seriously undermine TGI, thereby preventing any Caspian gas from reaching EU territory via Turkey. As TGI could provide Greece with half of its gas needs, this would also be a serious blow to Athens' gas diversification efforts.

Greece and Bulgaria thus became the next EU member countries (after Hungary) to ally themselves with the Kremlin and Gazprom against the common European interest of

diversification. Vagit Alekperov, president of the Russian oil giant Lukoil, already in 2001 revealed the thinking behind the Kremlin's strategic energy plan: 'Bulgaria, anti-Russian foreign policy in the foreseeable future'.

After Russia agreed to the B-A pipeline, talks with Turkey on Blue Stream II came to a halt. Turkey had by then become in Moscow's eyes very similar to Ukraine and Belarus: it was a major transit country between Russia and its West European customers that had become an obstacle to be bypassed. As relatively smaller countries, Greece and Bulgaria were far less able to resist Russian pressure; and after their participation was confirmed, South Stream gained significant momentum.

Greece and Bulgaria received both Western and Russian visitors over the following few months; however, the choices made by Washington/Brussels and Moscow reflected the differing priorities of both sides. Russia sent its top political leaders, who offered incentives along with threats, while the US sent senior diplomats—and the EU remained missing in action altogether.

On 23 October 2007, Russian Deputy Foreign Minister visited Bulgaria and met with his counterpart in Sofia. US then sent Bryza to Bulgaria on 7 December 2007. On 18 December, Greek Prime Minister visited Putin in Moscow; then Putin visited Bulgaria on 17 January 2008 and signed the South Stream deal. The agreement was reached despite strong opposition, including a protest against the project in Sofia's central park, the location of the first anticommunist demonstrations held in 1988.

Prior to Putin's arrival, the Bulgarian side had insisted in a majority share of the company that will construct and operate the pipeline on Bulgarian soil; Moscow had refused, instead asking for 51%. In the end, a 50-50 ownership was agreed, although little other information was released as to the terms of the agreement. The parallel with South Stream, a Russo-Bulgarian project bypassing Turkey, was not lost on any of the participants.

Greece resisted until after the April NATO summit, where it used the possibility of its signing up with South Stream as leverage with the rest of the EU and the US in its effort to prevent the Skopje government from using any name other than 'The Former Yugoslav Republic of Macedonia'. Karamanlis signed the agreement with outgoing Russian president Vladimir Putin on 29 April in Moscow. The agreement was ratified in August.

Bulgaria ratified the South Stream project on 25 July; before then, in response to criticism, Economy and Energy Minister Petar Dimitrov declared that 'It is extremely important for Bulgaria to have alternative routes for gas supply.' On 4 June, while in Baku to

show support for and commitment to Nabucco, he also said that these two pipeline projects were ‘not competing’ projects. On 18 June, when asked about Brussels' view, he responded that ‘the EU reaction has been definitely a positive one. It was explicitly emphasized that Nabucco is a priority project, but that South Stream is necessary’.

There are more countries that one could discuss, but even these are sufficient to show a clear pattern: a divided and distracted Europe and a strategic and determined Russia. As long as the EU keeps reciting its mantra that both South Stream and Nabucco are viable and that countries do not need to choose between them, Russia will win.

Though all of the Nabucco countries want this pipeline to be built, they are hedging their bets by signing onto South Stream, thereby undermining the very project they need. Yet it is clear countries dependent on Russian gas will not risk the ire of Moscow, and risk gas cutoffs or other forms of punishments. They all want security of supply, as well as develop their infrastructure, receive transit fees and in many ways not are ‘left out’. There is no price to pay for undermining Nabucco—all the countries along its route would prefer this option, but none will take a position unless Brussels takes a stand. Individual countries are too small and too vulnerable to deal with Russia; only a united Europe can.

Outside the EU, **Serbia**, another South Stream target along the middle of potential Black Sea-Western Europe pipeline routes, also came under Russian manipulation and political pressure. Russia greatly benefited from the EU/US tension with Serbia over Kosovo's declaration of independence. Moscow strongly opposed independence for Pristina, a position that was viewed in Belgrade as critically important to Serbia.

With the West's focus drawn rather narrowly to Kosovo, Russia was able to offer a broad package deal that convinced the Serbian leadership to sign onto the South Stream project.

On 25 January 2008, President Tadic and Prime Minister Kostunica visited Putin in Moscow and officially signed the agreement. Americans and Europeans - once again - were caught by surprise. While they urged a delay, hoping that a new Serbian government might be of a more pro-Western orientation and would and refrain from going forward with South Stream, the West simply had no real influence over Belgrade in light of the upcoming Kosovo decision. Dimitri Medvedev visited Serbia as the likely next president of Russia and on 25 February presided over the South Stream signing ceremony there—one week after the Kosovo independence declaration. Medvedev made clear that Russia had taken full advantage of the Kosovo crisis, stating that the gas deal was indented to show ‘our support, moral, material and

economic, for a state which is in a very difficult position, a state which unfortunately, by the will of a number of other states, has had its territorial integrity put in doubt Measures are being taken to break it up into pieces.

Gazprom wanted Serbia to quickly ratify the agreement—before the 11 May elections that could have brought a pro-Western government into office. However the project has failed to win the approval of the country's cabinet. The deal was blocked by members of the Western-leaning Democratic Party to leave the possibility for renegotiations—including also on the sale of the state oil monopoly NIS—if they came into office. Gazprom publicly berated Serbia for the delay in implementing the deal, which included the formation of a joint Russian-Serbian company on 25 May.

As Gazprom feared, following the victory of the Democratic Party, the ratification process stalled—but ratified in September. Moscow succeeded in exploiting Serbia's fears of being isolated in order to extract as many concessions on energy as it could. These concessions will have lasting effects; even after Serbia becomes part of the European and Euro-Atlantic structures, Russia will continue to have significant influence over Belgrade's domestic and foreign policy.

Both Eni and Gazprom assert that South Stream will supply Russian gas; however, there are many uncertainties about these supplies. A number of analysts and industry experts have expressed serious doubt regarding Russia's ability to increase its natural gas production. Almost all agree that Russia—endowed as it is with the world's largest natural gas reserves—has the *potential* to increase production above its current level of around 650 bcm. However, a number of factors make such an increase unlikely.

First, the fields from which Russia currently extracts the majority of its gas are either rapidly maturing or are already in decline. Developing new fields—many of which are technically challenging and/or located in inhospitable climates—will require tens of billions of euro in investment and a significant amount of time. Second, Russia badly needs to modernize its existing gas infrastructure, most of which was built during the Soviet era. This modernization will also require an investment of several billion euros. It is difficult to imagine Gazprom being able to finance these investments on its own, and it is even more difficult to imagine a foreign energy company—or companies—being willing to put that much money into Russia, given the prevailing poor investment climate.

The Russian government's own projections show Gazprom's production stagnating in the near future, although they predict that formally independent companies such as Novatek or

Lukoil will fill the gap. However, Lukoil recently announced a 3% decrease in its 2009 production forecasts. The government also envisions a decrease in domestic consumption, spurred by improved energy efficiency and an increase in the heavily subsidized price paid by Russian consumers. Yet, raising domestic energy prices will be extremely unpopular politically, and Moscow will be hard-pressed to make this sacrifice. Indeed, the Economy Ministry recently announced that a price liberalisation plan approved in 2006 will be delayed. According to the plan, adopted under pressure from Gazprom, prices were to steadily increase from \$45 per thousand cubic metres (tcm) to \$125 per tcm by 2011. However, global energy prices have soared since then, and \$175 per tcm is now quoted as the target 'liberalised' price. The Economy Ministry has expressed doubts that the economy could withstand so steep a price increase.

Credible estimates suggest that Russia may no longer be able to meet its contracted obligations as early as 2010; this is why it is so in need of Central Asian gas. Moreover, the gas that would be sent to Europe via South Stream will be mostly the same gas that would be diverted from the existing route via Ukraine—coming from Central Asia, as well as West Siberia and possibly East Siberia. In addition to its problems confirming its gas supply, South Stream also has tremendous financial difficulties. Gazprom is already heavily indebted in part due to its massive purchase of assets across Europe and Eurasia, as well as its non-energy related businesses. Sinking billions of dollars into Nord Stream or South Stream does not make any sense financially—but as explained earlier, these are primarily projects serving Russian strategic interests, not the commercial interests of Gazprom.

Nonetheless, despite its tight links to the Kremlin, given the global economic downturn, Gazprom may simply be unable to obtain the necessary funding. Financial issues are also a serious source of concern for the transit countries. Greece and Bulgaria signed onto South Stream when its cost estimate was half the figure quoted now, which is €12.8 billion; the countries along the route are now even more dependent on attracting international investment to complete this political pipeline project.

Moreover, even the €12.8 billion is definitely too low a figure for a number of reasons. First, there have not yet been any proper feasibility studies for the pipeline, i.e. the figure is a mere estimate. Second, the doubling of the price was announced as an outcome of higher steel prices; the project's capital cost will continue to increase as steel prices go up—but much higher than would be the case for Nabucco or TGI given the need for four parallel pipelines that would need to be constructed across the Black Sea.

Even once the pipeline reaches Bulgaria, further price increases linked to construction costs are likely, for example due to onshore terrain difficulties and potential changes in the pipeline route.

The relevant countries need to receive a clear breakdown of the costs, including precisely how much Russia will contribute. Moreover, they do not yet know precisely how much gas will transit their countries and how much they will use domestically.

There are also additional uncertainties following the Russian-Georgian war, and all these numbers are likely going to rise considerably. In the week after the Russian invasion, over \$16 billion in capital has fled the Russian market. Investors are nervous about the direction Russia's relations with the West are taking. For all these reasons, it is risky to commit to South Stream, particularly if doing so also means derailing Nabucco.

Risks of Surplus Capacity

If South Stream (and Nord Stream) is constructed, Gazprom will actually enjoy a surplus of export capacity while Europe will face a deficit of supply options. This possibility is very troubling. Having a strong monopoly on transit routes into Europe, even if underutilized, still gives Russia significant influence vis-à-vis its ability to grant other producers access to these routes.

Those countries depending on Russian-supplied gas would become captive markets, forcing them to compete with each other for increasingly scarce Russian gas. Prices would certainly escalate, but Moscow would also be able to extract political concessions from consumer countries as those governments that most support the Kremlin would get preference for gas supplies. This leverage is not necessarily exercised through dramatic, blatant acts such as supply cut-offs but instead through subtle and protracted efforts. For example, Russia has been nothing but a reliable supplier to Turkey, even providing emergency supplemental exports in January 2008 when Iran ceased gas shipments due to a price dispute with Turkmenistan. However, since the start of Blue Stream in 2005, Ankara has moved closer to Putin's Russia.

Remembering that Turkey once had the option of two pipelines—the trans-Caspian pipeline or Blue Stream—it now is even clearer that the former would have been more in Europe's interest. Another development that should be of serious concern is the Russian-led formation of a cartel-type organization for natural gas that will allow it to coordinate European supply. South Stream, for example, could be used to ship Iranian and other Middle Eastern gas in addition to Russian supplies.

Russia, Iran and Qatar together already hold 56% of world's reserves (according to BP estimates); with Venezuela, Algeria and Libya joining the group would have about 2/3 of world reserves in their control. This would mean tremendous influence over Europe: both in gas pricing and political influence.

Just as they have done with South Stream, European officials have displayed considerable reluctance to address the implications of the gas cartel. Commissioner Piebalgs even suggested it is 'unhealthy' to talk about the potential formation of a gas cartel, because it would wrongly frighten consumers.

In fact, Moscow is taking clear steps towards just such an organization. There is already a draft charter suggesting that the Gas Exporting Countries Forum (GECF) should become an international platform for elaborating a universal gas pricing formula and discussing routes for new gas pipelines and swap arrangements. From there, it would be an easy step for members to agree to divide up markets, thereby forming monopolies and gaining greater control over prices.

The comprehensive energy partnership agreement Gazprom and the Iranian state company NIOC reached on July 13 is quite significant, given that Russia is supposed to be working with the US and the EU to ensure that Iran has no room to maneuver on its ambition to develop nuclear weapons. While Western firms, most recently Total, are being pressured by their governments to leave Iran and its lucrative South Pars field, Russia's Gazprom may be positioning itself for a long-term strategic partnership with Iran. In addition to assisting Iran with its much-needed energy infrastructure development, Gazprom also seems interested in a possible gas swap deal under which Iran would receive gas from Gazprom in return for exporting the same amount of gas to Russian customers from the Persian Gulf. The Russo-Iranian MoU additionally suggests that NIOC and Gazprom would establish a joint company, which would undertake projects not only in Iran and Russia, but in third countries, including South American and Asian states.

Turkey could also become a participant in the Russian-Iranian partnership. In February Gazprom announced that it will team up with the Iranian Petroleum Ministry and a yet-to-be-named third party in the development of several South Pars phases. It is possible that a Turkish company will be that third party, given that Turkey and Iran already broadly agreed upon such cooperation in July 2007. Iranian Foreign Minister Manuchehr Mottaki recently stated that the Turkish side had indicated a willingness to invest \$6 billion in the South Pars field and to support additional pipeline construction, with the ultimate goal of an Iran-Europe pipeline

through Turkey. After several postponements, President Ahmedinejad finally visited Turkey in August 2008, a highly symbolic move as it was the first time he was hosted by a NATO member.

The two sides are expected to finalize the agreements over the next several months. At the same time, Turkey is being pressured by Gazprom, the largest Russian energy supplier and the most expensive source of gas for the country. Reportedly, Gazprom communicated to its Turkish interlocutors that if Nabucco is built, Russia will significantly increase prices for Turkey. Given that Turkey's contract with Gazprom on the western gas route will expire at the end of 2010 and that a new deal has yet to be concluded, there is some nervousness in Ankara, albeit combined with a general belief that Moscow would not treat them the same as Ukraine.

As mentioned earlier, if South Stream project continues its advancement, it will pull Central Asian (and possibly Azeri) gas in its direction. Yet the countries and companies committed to Nabucco will still want to proceed with that pipeline—but then with Iranian and possibly also Russian involvement, as the Austrians and Turks, among others, have been hinting since the start of this year. If that becomes the case, then there will be two major gas pipelines in EU's southern corridor that are controlled by Russia. This, obviously, would further increase Europe's dependence South Stream also poses a very real threat to Ukraine, as it would provide Moscow with the ability to disconnect its southern neighbor from the European gas network at any time. This not only threatens Ukrainian domestic consumers—and the risk of human suffering during a cold Ukrainian winter is not small—but also Ukraine's political future. Currently, Ukraine's position as the transit country for approximately 80 percent of Russian gas exports to Europe gives Kyiv some leverage with which to resist political pressure from Moscow. If all or even some of these exports were routed around Ukraine via South Stream, however, Ukraine would become significantly weaker vis-à-vis its northern neighbor.

Moscow has long been clear about its opposition to a Western choice for Ukraine, and has strongly opposed its NATO membership. Ukraine is in a precarious position; there are many in the government and the opposition who wish to reverse course away from the West and embrace the Russian worldview—along with its corresponding political and social values. Whether or not Ukraine continues its progress towards Western institutions and Western standards has much to do with its energy security, which, in turn, has much to do with South Stream.

The EU should not so readily abandon Ukraine to a future in which it will be obliged to follow Moscow's lead. While a variety of domestic factors may well lead Ukraine to choose to maintain close relations with Russia, this is a choice that it should be able to make itself, without Russian pressure.

Instead of backing South Stream, the EU should focus on improving Ukraine's gas transportation infrastructure. In fact, this is one of the reasons why a number of European countries support South Stream. Instead of bypassing Ukraine, transit of gas through the country could be placed under transparent management. Other measures include the establishment of gas metering stations at the borders; and clear separation of gas for transit from gas for internal consumption. The EU should encourage member states to work with Ukraine towards modernizing its ageing infrastructure.

Obviously, establishing credible guarantees that the rule of law will be upheld and that corruption will be under check is a prerequisite of such cooperation. These and other measures need to be undertaken if Ukraine is to be part of the European and Euro-Atlantic community.

Unless the EU starts treating energy as a foreign and security policy issue, it will continue to be outmaneuvered by countries that do view it that way. Europe has been utterly incapable of putting forward a consistent, unified effort to advance Nabucco, supposedly its 'priority' project. Instead, it has allowed its member states—along with Serbia, which wants to join the EU—to undermine the pipeline's prospects by signing up with the South Stream project.

Many European nations are simply afraid of angering Russia. Strong US support was sufficient to counter Russian opposition and European reluctance in the 1990s. However, in the current context, this will not be enough. Thanks to high energy prices, Moscow is much stronger and more assertive now than it was in the 1990s. What is more, the EU lacks the resolve to challenge Russia's monopoly pressure. Perhaps it is time for energy security to be more firmly integrated in the NATO treaty, as US Senator Richard Lugar suggested at the organization's November 2006 summit. That way, when energy is used as a political weapon to pressure a NATO member, the alliance would stand together in support of the threatened state. At the end of the day, however, this is a European problem that requires a European solution. If the EU is to survive as a united and global actor, it needs not dissension on energy security, but solidarity.

Conclusions

South Stream does not enhance European energy security; instead, it increases Russian influence over Europe, creating vulnerability for member states in taking decisions on issues relevant to the Kremlin.

South Stream is in direct competition with Nabucco—while there will be a huge increase in demand for gas in Europe, but today there is not enough market space for these two pipelines. Unlike South Stream, Nabucco is privately financed and needs the confidence of investors; the European Commission's backing of South Stream would kill Nabucco—at least in the short term and for Caspian gas.

South Stream would deny Europe direct access to gas from Azerbaijan and Central Asia, as well as possibly the Middle East and North Africa. Continued monopoly over Eurasian gas flows will enable Russia to reassert its influence over this region.

Gazprom may indeed not have enough gas to fill Nord Stream, South Stream, and its two preexisting pipeline networks through Ukraine and Belarus. Yet from Gazprom's perspective, this surplus capacity will have no negative effects. If both Nord Stream and South Stream are constructed, Nabucco will likely not be. Russia's dominant market position will be preserved and enhanced. Thus, European consumers will be left competing against each other for the scarce resources that Russia provides, driving up prices and granting Russia ever-greater leverage.

Recommendations

While the European Commission is unable to act with a single voice, the European Parliament can and needs to request issues related to security of South Stream to be considered prior to giving its approval.

- Demand that consortia for pipelines operating on EU soil are fully transparent and comply with all EU regulations on corruption and competition. If not, the mechanism of the Directorate-General for Competition should be used to prosecute and ensure the *acquis* is observed. Like its cousin Nord Stream, South Stream is registered in Switzerland, which is a non-EU country whose banking and corporate sectors are relatively unregulated. In addition, projects such as South Stream need to be evaluated in the context of Gazprom's favourable image that is enhanced, if not purchased outright, by its high-level political connections and public relations firms.

- Include external energy security issue as part of the Common Foreign and Security Policy (CFSP). The European Parliament has already suggested better coordination of a potentially common EU energy policy through the creation of a new post of a ‘High Representative for EU Energy Policy’. This has not happened yet, but is essential in light of Russia’s divide-and-rule tactics.

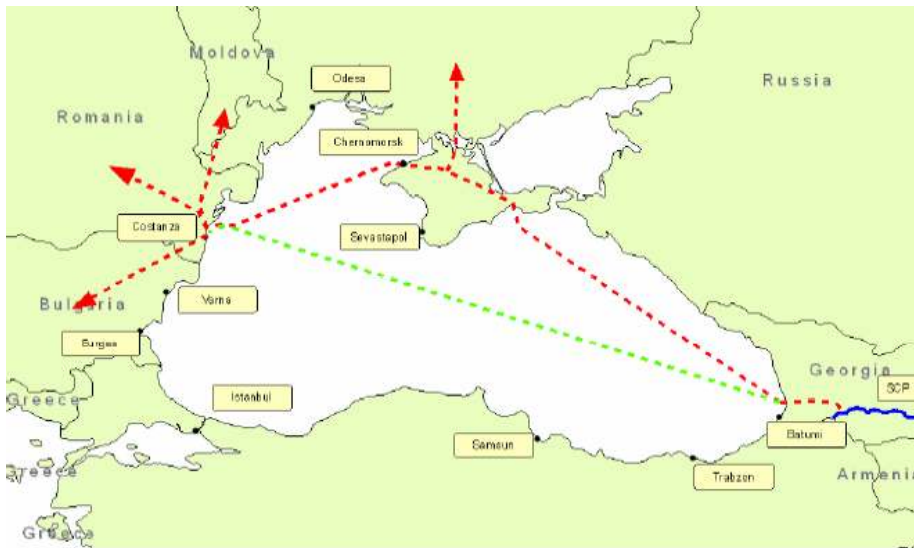
- Brussels and Washington need to cooperate much more closely. Following the November US presidential elections, it is possible to renew transatlantic partnership on energy issues. For Washington the key concern is that Europe will not be under Russian influence, so that the transatlantic solidarity remains solid, and that is the main reason for its promotion of non-Russian owned and non-Russian controlled new gas pipelines, especially out of the Caspian.

- Consider both Azerbaijan and Turkey as strategic energy partners and critical in supply source and route diversification. Azerbaijan can export significant amounts of gas to Europe but will only do so if there is direct and meaningful EU-Azerbaijan cooperation. Turkey will remain a reliable transit country for Europe if it is pulled closer to the EU; for that, energy chapter in the membership talks with the EU need to be opened.

- Increase active cooperation with Turkmenistan by offering concrete volume commitments. Overall, enhance partnership with Central Asia—so they will let in Western companies and send their energy westwards, which would also help them reform internally since these companies operate in a much more transparent and accountable manner than Russian ones. This will be good for Russia as well: if it cannot have access to Central Asian gas—which is basically the gas it would transport to Europe as ‘Russian gas’—Gazprom would have to invest in domestic production. This would lead to bringing more Western investment and operators, thus open up the system, and make more gas available for Europe.

- Keep the Caspian-EU corridor open by supporting multiple links: LNG and projects such as White Stream. There has to be an integrated internal gas market. MOL’s idea of interconnected gas pipelines in southeastern Europe needs to be supported.

Fig. 24 – The Two Suggested Routes of the Proposed White Stream Gas Pipeline



Slow down and study the project carefully. By virtue of the fact that South Stream would cross Romania's exclusive economic zone, that country can request extensive surveys and studies be done on the pipeline's economic, environmental, and transportation impacts. While Romania does not have the right to block South Stream, it can delay it significantly. Increased tension with Russia, especially in the Black Sea, may lead Ukraine and/or Turkey to further slow down progress on South Stream as the pipeline would have to pass through the exclusive economic marine zones of either one of them. For example, if Russia tries to increase gas prices too much, or challenges Ukraine's territorial integrity, Kyiv could deny approval for South Stream.

If the goal is to diversify supply sources and routes, then provide *credible* political support to Nabucco in order to enable and encourage exploration and development of upstream in Azerbaijan, Turkmenistan and Iraq.

5. Conclusion and Recommendation for the future EU energy supply strategy

The time has come to establish a European-level external energy strategy. The danger come from the possibility that Russia will use gas cutoffs as a political weapon, but also from the fact that Gazprom will keep investing in acquisition of Europe's strategic energy assets, thereby locking Europe into a deeper, long-term dependence while concentrating more and more power in fewer Kremlin hands.

Given the primacy of oil and natural gas in the European economy, it is not possible or even necessary to completely exclude Russian supplies. To reduce the detrimental effects of its current dependence, the EU needs only to reduce its reliance on this supplier.

In this context, the EU should ensure that the bulk of Caspian gas reaches its markets not through Russia, but through alternative corridors such as the Black Sea and Turkey.

The European Union should use all its weight in current and future bilateral negotiations and agreements, offering balanced, market-based solutions, with the Black Sea region, both with suppliers and transit countries.

The Black Sea Region has the potential to become an important piece of the jigsaw puzzle of the Black Sea geopolitical landscape. It can complement the Europeanisation process by enhancing the interdependence between the EU and the region and by helping to more effectively address common challenges in the state-building process. It can play a useful role in facilitating good neighbourly relations and improving the climate in the region via the implementation of its various cross-border cooperation programmes and initiatives. It could also provide additional opportunities for concrete cooperation and improved relations between the EU and certain key actors in the region such as Russia.

The EU's has acknowledged the great oil and natural gas potential of the Caspian Sea region. The oil and natural gas resources of the states of the Caspian Sea littoral could provide a temporary alternative energy supply if Russia interrupts again the oil exports.

The Caspian Sea region is soon going to be producing large volumes of oil and gas; the EU needs to move now to secure the timely production and reliable and environmentally sustainable transport of these resources to its markets. Support for Nabucco and TGI would significantly accelerate Western investments in the Caspian region, thus attracting the bulk of the gas reserves to European markets. The European market is strong enough to attract Central Asian gas and to prevent the gradual reorientation of the region to the east if sufficient

transportation infrastructure is developed. Given the eagerness of the region's key oil and gas producing countries in deeper engagement with the West and EU institutions, there is a unique opportunity not only to diversify European external supply further the goals and principles of the CFSP.

An integral part of an increased focus on Caspian hydrocarbons must be concerted EU action against Russian threats to the east-west corridor. In particular, as Russia seems determined to keep Georgia's frozen conflicts as points of leverage, the EU should condition any partnership with Russia on firm guarantees for Georgia's sovereignty. These should include an agreement to permit joint monitoring of the Roki tunnel through the North Caucasus on the Georgia-Russia border. Currently controlled by Russian peacekeepers and South Ossetian separatists, the tunnel's operation is a significant smuggling corridor and a key threat to Georgian sovereignty. Second, Moscow should not be permitted to tie together its acceptance of Kosovo's formal separation from Belgrade with international recognition for the Georgian region of Abkhazia. If the EU fails to place economic and political conditions on its relationship with Russia, it risks sending the wrong signals to Moscow—that it can get away with bullying independent states—and to the capitals of the Black and Caspian Sea region.

As a final conclusion, the West, including the EU and the United States, needs to quickly rethink its energy and non-energy policies towards Russia. As we can see in this paper, the West does have the economic and political leverage to force Russia to become more transparent and commercial in its foreign energy policies. It cannot allow Moscow to threaten the energy security of Europe anymore, having the possibility since the accession of Romania and Bulgaria to the EU in January 2007 to develop new routes of gas supply from the Caspian area through the Black sea into Europe.

Recommendation for the future EU energy supply strategy

The energy war is a small conflict, but still one with massive implications for Europe. This was Europe's first war of 21st century, which has seen Russia acting in line with the European real political models of the 19th and early 20th centuries.¹¹¹

But Russia today is intent on redrawing the map of Europe between this Europe, which is both peaceful and democratic, and the other Europe in which its dictatorial leadership is ready to go to war in order to satisfy its hunger for hegemonic power.

The Russian-Ukraine gas row revealed that the current situation characterized by a double monopoly – Russian monopoly on gas supply and Ukrainian monopoly on transit system – is no longer sustainable for the European needs and the centrality of the Caspian oil and gas to the problem of diversification away from the dependency on Russia is frequently highlighted.

Since the accession of Romania and Bulgaria to the EU in January 2007, the Caspian region has become a region of direct concern to the EU's strategy in its wider neighborhood, with the future of Caspian region affecting the interests of EU member states in the south-eastern perimeter.

Caucasus is a key for Europe because it has oil and gas, which allows diversification of supplies, it connects two seas – Black and Caspian, it is on the cross-roads connecting Europe, representing a key strategy for Europe to get out under the Russian energy supply dominance.

It is important for Europe to become a real geopolitical player in the region. The EU can't act as an institution with limited interest in security and geopolitics any more.

At a hypothetical question as: *How would you like European Union to develop in the following years the energy strategy of supply routes?* We could answer like this: *We would like Member States to build this strategy on their specific strength. We want Europe's Member States to work together on the strategy and to complement each other.*

Following the same method, the next question can be: *What does EU need to do to improve cooperation between Member States?* This question was already being seriously addressed at many levels and we hope for a better cooperation between Member States, but of

¹¹¹ As argued in more detail by Ivan Krastev, in "Russia and the Georgian war: The great-power trap", Open Democracy, 21 August 2008.

course the COM is responsible also for the big policy line, which is supported by the various programmes.

Fig. 25 – The Caspian gas supply route through Black Sea to Europe



At this point we can say that the aim of this paper-study was to define what might be a solution to get out under the Russian dominance and to offer as a possible solution the developing of a common European energy supply strategy from the Caspian region through the Black Sea to the European Union.

In this sense, the EU energy supply strategy is expecting to contribute to achieving these objectives by promoting new safe routes of supply and a balanced and sustainable development of the territory, making European Union safer concerning its energy supplies.

The EU holds all the foreign policy instruments required to promote political stability and economic reform, develop and straighten democracy and the rule of law, and enhance the respect of human rights and fundamental freedoms in the countries of the Caspian region. However, making this a reality is fraught with difficulty and Europe must respect some recommendations in order to formulate a common energy strategy in the Caspian area, such as:

- move swiftly to thwart Gazprom's overtures to Azerbaijan.

- give the political and economic backing to get Nabucco built and push for the creation of the trans-Caspian, intervening in the market to ensure diversity and prevent a monopoly of supply to Eastern Europe.
- ensure stability of transit countries, push to resolve Nagorno Karabakh, greater commitment to the Minsk process.
- think seriously about how to deal with Turkmenistan, balancing energy overtures with generous but not overbearing support for political and economic reforms. This will require concerted diplomacy and reassertion of western technological and technical superiority and ability to pay.

Most importantly, the EU-Caspian relations need to be further expanding in the bilateral and regional dimensions of economy and trade, as well as at diplomatic level. The last events that occurred in the energy chess board had give a real chance to the Caspian region to exert its importance as a significant geo-strategic pivot, as well as to the EU to play a global role in the region.

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7. List of Abbreviations

ADR	Azerbaijan Democratic Republic
Bcm	Billion cubic metres
BTC	Baku–Tbilisi–Ceyhan pipeline
BTE	Baku–Tbilisi–Erzurum pipeline
CFSP	Common foreign and security policy
CIS	Commonwealth of Independent States
CIS	Commonwealth of Independent States
CoE	Council of Europe
COM	European Commission
DTEK	Donbass Fuel and Energy Complex
EBRD	European Bank for Reconstruction and Development
ENP	European Neighborhood Policy
ENPI	European Neighborhood and Partnership Instrument
ETG	EuralTransGaz
EU	European Union
EUSR	European Union special representative
FDI	Foreign direct investment
GECF	Gas Exporting Countries Forum
GDP	Gross Domestic Product
GUAM	Georgia, Ukraine, Azerbaijan and Moldova
IDPs	Internally displaced persons
IEA	International Energy Agency
IGTS	Ukrainian international gas transit system
IMF	International Monetary Fund
ISO	Independent System Operators
LNG	Liquefied Natural Gas
LTSCs	Long-term Supply Contracts
MAP	Membership Action Plan
MoU	Memorandum of Understanding

NATO	North Atlantic Treaty Organization
OPEC	Organization of the Petroleum Exporting Countries
OSCE	Organization for Security and Cooperation in Europe
PCAs	Partnership and Cooperation Agreements
PSAs	Production Sharing Agreements
RUE	RosUkrEnergo
SCP	South Caucasus Pipeline
TACIS	Technical Assistance to the CIS
TCGP	Trans-Caspian Gas Pipeline
TGI	Turkey-Greece-Italy Gas Pipeline
TRACECA	Transport Corridor for Europe, Caucasus and Asia
UES	Unified Energy System
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
US	United States
WTO	World Trade Organisation