

EU-Russia Cooperation in a rapidly changing interregional gas market

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Abstract

In the past few years the gas sector has experienced a wave of unprecedented changes. The increasing globalization of gas markets and the technological breakthrough of shale gas production in the United States have triggered deep changes in Eurasian gas market governance. The long-established oil indexation in gas contracts is now challenged not only by the European Commission's efforts at liberalization but also by the private sector. The industrial sector's support for change has provoked a robust redefinition of gas governance structures between Russia and the EU, amidst Russian calls for the support of long-term gas contracts. The latter, from its perspective as a rising power in its own right, has no intention of importing EU's regulatory structures on its territory and is resisting them while operating in the EU. Against this background, this paper seeks to investigate the issues that are arising with respect to the EU's desire to change the institutional arrangements in gas trade with Russia. The new situation poses several challenges but introduces the possibility of a beneficial reassessment of the energy partnership towards a genuine Eurasian energy community. In the years to come, Russia will likely seek to challenge the EU's normative leadership and, more generally, to redefine Europe in ways that would be more inclusive of Russian interests and sensitivities. Thus, if the EU seizes the paradigm change as a moment to take Russia's proposals and ideas into consideration, the energy partnership could become more solid and symmetrical. In contrast, should the downward spiral of mutual disappointment continue, Russia will increasingly turn eastwards. In that context, if the US decides to withhold its shale gas bonanza for domestic use during a complicated shale revolution in the Old continent, the unreliability of Russian gas could force Europe to rethink its strategies.

1.1 Grappling with Paradigm Changes in the European Gas Markets

Many scholars, observers from the industry and political commentators have recently written about the ongoing paradigm change in European energy markets. One of the main objectives of this section is to conceptually define what is meant here by paradigm change and to briefly outline the paradigm changes that have been taking place in Europe since the postwar period. This has both practical and theoretical significance, given that some of the lingering effects of the past can be traced in the changes that have been occurring most recently in the EU's gas markets. My focus is on how the dramatic change happened in the last two years can be attributed to the interests of the leading European firms.

As stressed by Kuzemko (2012, p.191), there is no overarching and consistent definition of what is meant by paradigm change in the literature. Among energy policy scholars, the word gained notoriety by the CIEP studies of the paradigm shift in the early 2000s from the "Market and Institutions" towards a "Regions and Empire" story line.¹ Although there is no consensus on what are the analytical components of a paradigm change and what are the variables to determine it, maybe the most useful work to analytically think about paradigm changes is the contribution of Thomas Kuhn (1962). According to the latter, a paradigm shift is simply a change of the basic assumptions ruling theory or science. His monumental

¹ For a detailed discussion see: van der Linde & Correlje, *Energy supply security and geopolitics: A European perspective*, Energy Policy 34 (2006) 532–543

study² led to a spillover of the term into other societal, historical and economic disciplines to indicate a moment that cuts with the past due to sudden breakthroughs in science, politics and economics, or new ideas that can have radical as well as steady and longer-term impacts, but also due to deep crises and other types of unexpected events. History offers plenty of illustrative examples of events that represented breakthroughs or ruptures: the end of the Roman Empire, the French Revolution, the invention of the atomic bomb, the 9/11 terrorist attacks and most recently, the decline of the West and the rise of the East. Also, scholars disagree whether paradigm changes happen abruptly or gradually. For example, in an analysis of the life cycle of great powers the historian Niall Ferguson (2010) argued that Empires fall abruptly, in contrast with the long-accepted pattern of gradual rise and fall (Nye, 2012). An analogy between this debate and the ongoing debate about the European gas markets can be drawn; will the system of long-term oil-indexed pricing be overthrown or just attenuated? How sudden and how deep will the paradigm change be? In order to tackle this wider question let us first examine the historical paradigm changes that have occurred since the post-war period. We will then outline the current changes in the European markets and through these lenses, we will subsequently look at potential challenges in the future.

1.2 Paradigm changes in the European Energy Markets since the postwar period

Paradigms represent models of reality that help to set events in a given context, but the casual arrows go both ways; paradigms affect the way one perceives reality, but also relevant events from reality have an impact on paradigms. Since paradigms are lenses through which we view reality they also correlate with policy agendas (Goldthau, 2012). For instance, the post-war policy agendas in Europe were embedded in Keynesianism, or in what John Ruggie (1982) called *embedded liberalism* to indicate a system where markets were embedded in society; the system was set up to support a combination of free trade with the freedom for states to enhance their provision of welfare and to regulate their economies to reduce unemployment. Embedded liberalism prospered in the 1950s and the 1960s until its breakdown in the late 1970s. The system was characterized by a capitalist model underpinned by centralized and *dirigiste* politics with a proactive role for the government. In those years, Western European energy markets were dominated by a few state-owned providers; energy prices were, by and large, set by state authorities, only vaguely oriented at actual costs; and market access and exchange were highly regulated in order to control prices. As noted by Goldthau (2012) the state's primary task was to ensure the provision of basic and vital services to its citizens, notably in sectors that relied on networks and were hence considered natural monopolies, such as telecommunications, railways, water, district heating or even postal services. Companies providing for such services were predominantly state-owned, designed to provide across-the-board coverage to households, with little attention to their costs. The main purpose of the "national champions" was to ensure the energy security of their own country, thus companies were bound and determined to achieve that goal without paying too much attention to cost-benefit calculations. In that system, competition was not a top priority and state intervention in the economy was justified to create employment or economic growth. Because no price mechanism existed that would properly reflect supply and demand patterns, energy providers – whether state run or private – remained in control of the entire energy value chain, from energy input to energy conversion and output to the energy end-consumer. In this governance system, vertical integration dominated the industry as a predominant pattern until the late 1970s. In the early 1980s the change was spurred by a combination of exogenous events and new ideas that were gaining momentum. It is difficult to establish clearly the causal relationship between the two. In the 1950s and 1960s, the global economy prospered under *embedded liberalism*, with growth more rapid than before or since, however, in the early 1970s the period of economic expansion came to an end,

² Thomas Kuhn, "The Structure of Scientific Revolutions" (1962)

following in quick succession the collapse of the Bretton Woods system and the two oil price increases of 1973-74 and 1979-80. In that climate, the neo-liberal echoes of the Chicago School of Economics started to be heard far beyond North American campuses and gained broad political support. The basic idea was that since the profit motive is by and large absent in publicly owned companies, they tend to be inefficient and build up slack. That new idea paved the way to energy market liberalization, as promoted by the governments of Thatcher (UK) and Reagan (US). The governments started to switch their roles from producers to regulators of privatized interests, including within the utilities sector. In Europe, the European Commission became the steward of liberalization and after the adoption of the Single European Market in 1985, undertook a process of gradual restructuring associated with the neoliberal ideas. In the early 1990s the EC promoted a series of laws that aimed to privatize previously public sectors of the economy, such as posts and telecommunications, transportation and the energy sector.³ However the process was not homogeneous in the entire Old continent. As noted by Van der Linde (2010), the United Kingdom's view became strongly shared by the European Commission, whose DG Competition started to spread the model across the continent.⁴ However, different countries responded differently to the change. While in the UK and in the US the governments of Ronald Reagan and Margaret Thatcher promoted the paradigm change, in some continental and south European states the changes had to be imported from the "outside." In a way or another, the change brought the adoption of the so-called Anglo-Saxon model of liberalization at the EU's energy level, and the European Commission started with the first regulatory measures in that direction. In the gas market, in 1998 the European Commission issued the first gas directive, which was still a compromise with the core issues of harmonization, such as access to pipelines, market opening and regulation left to the judgment of individual member states. Meanwhile, by the early 2000s, after the terrorist attacks, with an increased resource nationalism amongst the producer countries under the effect of surging oil prices, the general atmosphere in the world stage had changed once again: the 1990s enthusiastic belief that the world would become a "global village" governed by multilateral governance structures did not materialize. The major exporting states rejected any further liberalization of energy markets and the application of commonly shared rules about investment and arbitration procedures. In fact to date, apart from diverse informal energy dialogues, there is no forum of discussion for a universally applicable set of regulations in the energy sector.⁵ In a context in which multilateral institutions deteriorated, states tried to resolve their problems with bilateralism. Hence, in the 2000s for the most part the producers' energy nationalism coexisted with the EU's member states renewed interventionism in energy markets. Also, recognizing that new challenges like climate change and energy poverty could not to be dealt with only by market mechanisms, the European countries recaptured to a certain extent the reins of the energy sector and shifted towards what Goldthau calls (2012) *interventionism*. Therefore, the state's role was no longer one of a mere enforcer but rather, it was once again perceived as a stakeholder of 'public interest.' At the same time, climate change and energy poverty were being increasingly recognized as crucial concerns, and thus increased complexity was given to the already uncertain energy environment. However, in comparison with the *statism* of the 1950s and 1960s the European Commission had gone a long way in these few decades. In fact, as the European Member states were increasingly sliding back into realist approaches, the European Commission was proceeding with its leadership, lobbying for the new

³ Tax reductions, 'rolling back the state' and market-driven competition were introduced to reform the economy and increase efficiency (CIEP, 2006).

⁴ Liberalization of the European Gas market – The United Kingdom Model and the Continental Model, available at: <http://www.publications.parliament.uk/pa/ld200304/ldselect/ldecom/105/10505.htm>, Accessed in October 2012.

⁵ For a detailed discussion see, among others: Goldthau A. and Witte J.M. *Global Energy Governance: The New Rules of the Game*, Global Public Policy Institute, Berlin, 2010, and Florini, A. *Global Governance and Energy*, in Pascual, C. and Elkind J. (ed.) *Energy Security: Economics, Politics, Strategies and Implications*, Brookings Institution Press, Washington, D.C., 2010, Chapter 7, pp. 149-181.

challenges to be addressed within a multilateral framework presided by the European Commission.⁶ In sum, a somewhat contrasting pattern was unfolding in the 2000s; while the member states were reasserting their sovereignty in energy security, the European Commission was intensifying its liberalization efforts. The second energy directive was adopted in June 2003, and it required full market opening of national sector regulators, regulated third party network access, regulated or negotiated access to storage and legislated the further unbundling of integrated companies.⁷ It introduced qualitative obligatory minimum requirements for access to transmission systems (network tariffs, third party access services, capacity allocation, transparency, balancing and trading of capacity rights). As noted by Talus (2012) much like the first gas directive, this new regime failed to create competitive natural gas markets in the EU.⁸ The next directive, in 2009, the Third Package intended to strengthen the regulatory instruments and devices, and also to promote the far-reaching step of ownership unbundling, requiring a full divestment of the transmission networks from the vertically integrated gas and electricity companies.⁹ According to Talus (2012) only this new directive opened the door for actual competition. This paper contends that these endogenous regulatory innovations while necessary, would not have been sufficient *per se* to create the conditions that led to the partial erosion of the old gas market rules and structures in Europe. The exogenous trigger came from the United States in the form of a quiet but formidable shale gas revolution. In fact, I believe there is a peculiar correlation between America's shale boom, the fact that the European corporate sector started to incur huge losses, and the latest disruptive paradigm change in the European gas markets. In the next sections I intend to test this hypothesis through my examination of the current paradigm change in the EU's gas markets and its influence on the EU-Russia gas relations.

1.3 The current paradigm change in the EU-Russia's gas governance and the Gas Companies' Interests

The effects of the economic downturn mixed with the shale gas revolution made the US suddenly self-sufficient in gas. As a result, large amounts of LNG, which was originally designed for American ports was now re-routed to the European harbors and delivered to European hubs. As this gas hit the European spot markets spot prices became structurally lower than the oil-indexed prices of Gazprom's contracts, with a large spread between oil indexed pipeline gas averaging around \$12-14MMbtu against spot traded prices at \$8-10MMbtu (Hulbert, 2012). Clearly, that put pressure on the oil-indexed contracts and increased the volume of LNG trading in the European markets. As noted by Hulbert (2012) close to 50% of all physically traded gas in Europe, was exchanged on a spot market basis in 2011. According to some observers (Mitrova, 2012; Konoplyanik, 2012) Gazprom responded in a rational and timely manner by starting to adapt its contractual structures and pricing mechanisms to the changing realities of the buyers' market. In Mitrova's words: "*It is not fair to say that Gazprom is not adapting to the situation, but it is not happening as fast as the European customers would want it to happen. Obviously Gazprom favors oil indexation because it is providing high profits while it will be difficult to get any margin under the spot pricing system. Although officially Gazprom*

⁶ As it is well known, the European Commission has proven an admirable commitment in tackling climate change. On the other hand, the DG Comp of the Commission has been inexorably pushing for internal liberalization of the gas market and struggling with the Member States that want to retain their sovereignty in external energy matters. Therefore, these two advanced aspects of EU policy-making; environmental and competition policies were the two pillars from which the EU continued to erode member states' sovereignty in energy matters.

⁷ The European Commission: Competition at National and International Levels: Energy Annex A – Regulatory Framework, Geneva, 17-19 July 2007

⁸ One of the reasons for this was the continuing existence of long-term transportation capacity reservations that were allowed to accommodate the underlying commodity contracts, and were based on considerations like legal certainty and the protection of legitimate expectations.

⁹ European Commission: http://ec.europa.eu/energy/gas_electricity/legislation/legislation_en.htm, Accessed in October 2012

denies any possibility to switch to spot pricing, it already sells more than 20 bcm through spot elements, with its subsidiary Gazprom marketing and trading.”¹⁰ As noted by Konoplyanik, however, the downgrading of minimal TOP obligation in Gazprom’s European contracts from 85 to 60% plus converting 15% of contractual volumes from oil-indexation to spot price (calculated as the mean value at major European hubs) was an involuntary measure (see table 1).

Table 1. Gazprom: adaptation of contract provisions and pricing mechanisms in Europe since 2009

Actions	Companies
Buyers’ demands for price reviews and contract adjustments following “significant market changes”	E.On, Wingas, RWE, Botas, Eni, GdF Suez, EconGas, Gasum
Downgrading minimum TOP obligations from Gazprom’s average 85%	E.ON, Botas: from 90% to 75%; ENI: from 85% to 60% for 3 years 1/4 >Gazprom total 15 BCM for 3 years 1/4 5/140-145 BCM (2010) 1/4 3.5% RF gas export volume
No penalties for violation of minimum TOP obligations	Naftogaz Ukraine, Botas; Eni, E.ON pending
Gas sales above minimum TOP obligations at current spot prices	E.ON, GdF, Eni
Adding gas-to-gas competition component into pricing formulae thus decreasing /softening oil-indexation formulae link	E.ON, GdF, EnieGazprom 1/4 15% based on a basket of European gas hubs, E.ON-Statoil 1/4 25%; Statoil average up to 30%, requests to Gazprom up to 40%
Increasing flexibility of contractual provisions	Gazprom’s “promotional package”
Recalculating base formulae price	Wingas
Direct price concessions	Naftogas Ukraine, Botas (tbc)
Maneuver by contract volumes within contractual time-frame p requests to cancel obligation to off-take contracted volumes within 5-year period	E.ON, Eni
Stimulating measures (“packages”) for purchases in excess of (downgraded) minimum TOP	E.ON, Eni
Shorter contract durations	Sonatrach
Shortening of recalculation period/interval	Possible
Shortening of reference period	Possible
Some buyers files lawsuits against Gazprom over long-term prices (within Price Review/Dispute Settlement LTGEC clauses)	Edison S.p.A. (AC SCC), EON-RuhrGas, RWE, PGNiG, etc.

Source: Konoplyanik, A., *Energy Strategy Reviews 1* (2012) 42-56

Note: According to Mitrova in a “step by step” renegotiation more than 50 companies have received price discounts in addition to take or pay volume reductions.

¹⁰ Interview with the Author, October 2012

These changes reflect Gazprom's forced adaptation to the new reality of Continental Europe resulting from the above-mentioned trinity of reasons: the economic crisis, new liquefaction capacity and the American shale boom.¹¹ In addition, the regulatory measures pushed through by Brussels over the past decade towards an increased liberalization of the gas market, have made the efforts of the incumbents to protect their markets more difficult. As noted by Talus (2012), whereas in the past the incumbents would sign take-or-pay contracts with the external producers and then mirror the volumes of these contracts with downstream take-or-pay contracts with its own consumers, such as resellers or large industrial users, this is no longer possible. The importer is faced with a situation where it has significant take-or-pay commitments but no certainty that it can dispose these volumes in its traditional markets. Moreover, the effective liberalization within the EU had opened the door for second tier players to take market shares from incumbents, bypassing traditional wholesalers and going straight to large end users from spot. Incumbents are not just oversupplied, but unable to retain market shares by offering discounted supplies. That explains why Gazprom's concessions have not been sufficient to settle down the hostilities that had arisen with its big European customers (i.e the incumbents) in the past few years. European big companies such as EON and ENI were left with a serious "liquidity" problem. To put it bluntly: according to a European industry insider,¹² European utility companies such as RWE and ENI have lost around 1 billion \$ in 2009, and 2-2,5 billion \$ in 2010 and 2011 due to their long-term "take or pay" contracts, remaining trapped in expensive long-term contracts with minimum take-or-pay clauses, while their downstream market fell away and their customers were often able to purchase gas cheaper on the spot markets. In fact, in some cases there is still ongoing arbitration about price disputes between Gazprom and a number of EU companies, such as RWE. The most conspicuous dispute with the German energy giant E.ON Ruhrgas was settled in July 2012.¹³ A Russian energy expert observes: "*Gazprom prefers to settle these disputes outside the courtroom with concessions and more adaptable contractual terms. In was the case of E.on and Edison, and I frankly expect that the other three will be settled in the nearest future.*"¹⁴ However, a European executive sees the dispute very differently. He says: "*A precondition for a real change is the removal of the take-or-pay clause. Meager discounts cannot alleviate the pain of the current contractual structures.*" And he recalls: "*In the past few years when the companies were unable to sustain the costs of Gazprom's contracts, the latter would offer discounts in exchange of a direct entrance in their capital, as it happened with RWE, but a substantial abandoning of the currently unaffordable take-or-pay rule, did not happen.*" In fact, according to the above-mentioned industry insider, another concern stems from Russian participation in European energy markets, more precisely over the past years there was a debate inside Gazprom, between the advocates of direct access to the European markets and those in favor of a more moderate line, that were praising the European big companies' intermediation in order to avoid a "boomerang-effect." According to the European businessman, a middle-view prevailed, as Gazprom is not aggressively entering the market but it is at the same time not willing to deeply revise the take-or pay clauses. In sum, although Gazprom reacted in an unusually receptive way, the European counterparts see the debate very differently, pointing out that only thin discounts, and not a true revision of the take-or pay were obtained. This has become a real challenge. Gazprom's official position is in favor of oil indexation and its executives are busy reminding that spot prices for gas cannot be compared to the price of gas in long-term contracts, because long-term contracts include the reliability of stable deliveries over a significant length of time, and consumers should understand that they must pay for this reliability as well as for the gas

¹¹ Until recently, Gazprom had a tight grip on Western Europe, where it supplied around 25% of its gas. For a long time, this insulated Gazprom from shifts in global gas markets. Thanks to America's shale boom, this business model is now under threat.

¹² Interview with the Author, January, 2012

¹³ The Wall Street Journal, "E.ON Settles Gazprom Dispute" July 3, 2012 and Ria Novosti "Gazprom signs Corrective Gas Price Contract with E.ON," July 3, 2012

¹⁴ Interview with the Author, October 2012

itself.¹⁵ Moreover, the supplier needs security in order to cover the expenses of new upstream investments. But the European utility companies increasingly find themselves in a situation where they are paying oil-linked prices in long-term contracts while their competitors – and their customers – have the opportunity to buy gas at hub-based prices. In short, in the last few years, the big EU utilities were left oversupplied with Russian gas, which spurred them to lobby for a long-run profound change. According to Talus, who builds on Stern and Rogers (2011) work on corporate restructuring and cultural change, the merger wave that in Europe took place in the post-2000s period created very large utilities active in both electricity and gas. The result of the Third Gas Directive was that EU gas firms were urged to expand their range of activities (i.e. “green” technology) and areas of operation (i.e. Eastern Europe) in order to continue to make profits, thus a relatively small number of very large utility companies - E.ON, RWE, EdF, GdF Suez, ENI, Enel, Endesa, Iberdrola and Vattenfall – owning a variety of utility assets across a number of European countries, started dominating the European landscape. According to Talus (2012) and Stern & Rogers (2011 p.20), these changes in industrial organization meant that the traditional business mentality in the EU’s gas market started to change. As noted by Stern and Rogers: *“The resulting companies – usually with electricity executives dominating the board-level positions – share little of the corporate culture of the old European gas companies. They do not have the multi-decade “relationship culture” created by long term contracts, or any significant commercial experience of relationships with non-European external suppliers.”*

While agreeing that for a number of countries the new model implies a break with history and it does help us understand some of the main forces pushing corporate restructuring forward, I argue that, it only offers an incomplete picture of the geo-economic context under which the latest paradigm change is taking place. My analysis points out that the direct collaboration between the EU’s large utilities and Gazprom became strained only when the EU utilities started to incur large losses, and not so much because the new leadership saw traditional long-term gas contracts (and oil-linked prices) as a distortion of the market and as hampering fair competition. In fact, in a recent interview for the European Energy Review, Jean-François Cirelli, President of natural gas trade association Eurogas and Vice Chairman and President of French energy company GDF Suez, says: *“The vast majority of the Eurogas membership still favors long-term contracts because security of supply is the first priority for a gas company to offer society and long-term contracts are well-suited to that. But clearly the market is going to have to change.”*¹⁶

This article holds that the European energy structures are the institutional legacy of a past when European national and vertically integrated majors were responsible for ensuring energy security of their respective countries with little consideration for the costs. With the advent of liberalization measures, the EU’s utilities’ role has changed; they were no longer responsible for their countries large-scale and affordable (energy) service provision and instead they focused their attention on maximizing shareholders’ value. Even in that situation large companies were able to strike profits, as long as they managed to maintain large shares of their markets at home and transfer the take-or-pay obligation further to the retail market. In fact, the EU’s industry largely resisted liberalization, until the exogenous elements hit so hard that the EU utilities had to acquiesce, for their own sake as they were facing enormous losses. But with LNG tankers previously destined for the US now delivering to European ports, the European utilities contracted to expensive Russian pipeline gas have been losing customers and money, constantly being undercut by new market entrants using spot purchases to good effect over term prices. And it is this inability of incumbents to retain their consumers – rather than a changing mentality or the price *per se* – that has made

¹⁵ Author’s Interview with Alexander Medvedev, Director General of Gazprom export, November 2012

¹⁶ “We need a decarbonisation policy that favours gas,” Interview: Jean-François Cirelli on change the European gas industry by Sonja van Renssen, European Energy Review, April 2012

disputes with Russia's Gazprom so bitter in the last years, and that in turn, made the EU utilities favor spot elements and shorter contracts in their dealings with Gazprom.

This point helps show that this paradigm shift would certainly not have been possible without the input of the key-actors that supported and facilitated a switch from oil indexation to increased spot elements in gas trading. It is also important to note that the European Commission alongside with the UK and the United States had for a long time framed long-term oil-indexed contracts as more of a problem than a solution, calling for more gas-to-gas competition, but only when the key corporate actors partly embraced this idea, due to their self interest and profit maximization concerns, a big change in the Eurasian gas governance structures was made possible.

As noted by Konoplyanik (2012) these changes have created a 'hybrid' pricing model in Europe ever since, with both pipeline gas, and gas traded at hubs. The hybrid-pricing model has been accompanied by largely uncertain gas governance structures in Eurasia. Increasingly hybrid or even fragmented environments between state dirigisme and market liberalism (Goldthau, 2012) are accompanied by transnational and globalized outcomes. Businesses will be operating in growing uncertainty, and although gradual, the market changes in the contractual structures and pricing mechanisms could be irreversible. Hence, evidence shows that European and Russian interests may clash even more in the years to come, probably resulting in a relaxing of EU-Russia interdependence and by consequence an even more fragmented institutional landscape between the two actors. In light of this, and looking ahead, I believe that the EU runs some risks if it wants to play with overthrowing completely the old gas structures, while at the same time introducing entirely new rules and structures. This study agrees with the need for gradual adaptation to the new mixed or hybrid model that has emerged, but is also stresses alongside with De Jong (2012), that the EU cannot afford the luxury of experimenting with a fully new gas market design. Also, it replicates Konoplyanik's point that the change should be promoted in practice through negotiations, and not through radical top-down interventions. The current oversupply is temporary; the world is growing in population and new emerging powers will dramatically increase gas consumption. According to the scenarios of major companies, the European gas demand should recover by 2012 (Gazprom) or by 2015 (EON-RuhrGas).¹⁷ It seems that the US shale gas bonanza will not leave the American shores for some time, due to political and regulatory constraints compounded by a fear that exports could cause an increase in domestic prices of gas.¹⁸ But even if the US begins exporting shale gas in form of LNG, unsurprisingly American producers all favor the Asian market, where they can seize the biggest profits. Therefore, if the EU fails to develop its own shale gas in the near future, which is indeed probable, it could find itself in an uncomfortable position of having to chase an eastward looking Russia, in order to support its ambitious decarbonization policy.

In sum, the rapidity of the changes in the gas markets, compounded with a broader geopolitical paradigm change in the shape of the rise of the East and a relative decline of the West, all indicate that energy companies will have to operate in increasingly complex and uncertain environments. The creativity of the companies will be crucial to adapt the current Eurasian gas governance structures to the progressive globalization of the gas markets. However, in times of systemic uncertainty, the companies' strategies will have to be backed more than ever by carefully weighted political decisions in Brussels and in the European capitals. The two-fold challenge, of changing energy structures in Eurasian gas trade on the one hand, and of changing power structures on the world's stage on the other, may place the

¹⁷ Discussed in Konoplyanik (2012, p.54)

¹⁸ "U.S. Shale Gas Exports Face Hurdles, Former Exxon CEO Says", By Kari Lundgren, February 10, 2012, Bloomberg and "The U.S. Has A Natural Gas Glut; Why Exporting It As LNG Is A Good Idea" by Christopher Helman, June 13, 2012, Forbes.

EU in front of uncomfortable future choices, in turn forcing the Old continent to rethink its strategies towards Russia. The purpose of the next sections is to evaluate the impact that these large geo-economic processes are having on the EU-Russia's energy governance. First, we will look at the expansion of LNG imports into Europe and an even greater expansion of LNG capacity, predominantly outside Russia. Secondly, we turn to the emergence of the gas shale boom in North America and on its potential replica on the European continent.

1.4 The expansion of LNG imports into Europe and the potential impact of unconventional gas fields in Europe

The shale gas revolution in the US has revealed two things: first, what happens in one part of the world – be it the Arab Spring, nuclear catastrophes, new resource finds or intractable economic woes – all have an influence on gas fundamentals, pricing and outlook far beyond their immediate geographic regions. Second, LNG growth in Europe started to erode old market rules towards new market structures. Nevertheless, as it will be illustrated in the next sections, for Europe the new situation is not risk-free.

1.4.1 LNG: a game-changer?

In the last few years huge investments have been directed to all three stages of LNG, flooding the European gas market with comparatively cheap LNG through multiple new regasification terminals (Aslund, 2011). According to CERA (2011 p.24) in Europe LNG imports are growing faster than imports of pipeline gas. LNG's share of the European supply mix is projected to grow from 13% in 2009 to nearly 20% in 2020. According to a recently popular storyline, LNG is expected to replace much of the decline in production from the North Sea, that combined with plentiful flows of locally-produced European shale gas will lead to further expansion of short-term contracts and spot trade and pricing, with a development of liquid hubs, that will ultimately lead to a decreased gas price for the European end-users.

This scenario presents some problems, which need further clarification. First, contrary to a common belief among consumers, setting gas prices based on gas fundamentals has nothing to do with being cheap – it is purely about achieving a cost reflective price for whatever the markets (and fundamentals) suggest gas should be. Second, the emerging “spot” gas market within the EU adds uncertainties and volatility to the prices, with a potential growing role of non-gas speculators (Konoplyanik, 2012). Third, despite the growth of gas traded through “spot” contracts, the EU will still need Russian gas as the backbone, at least in the next few decades, for its continued decarbonization of energy aided by a larger use of gas as a “bridge fuel” to a low-carbon future. The high growth of natural gas consumption projected by the IEA (Golden Growth Report, 2011) and other observers will continue to be imported mainly from Russia due to the territorial proximity and the long term contracts already in place. Whereas domestic EU gas production is projected to decline, in the longer run the EU demand is set to increase.¹⁹ Admittedly, the sources of EU imports will become more diversified, with a growing share of LNG, while the share of the Russia's supplies falls from 61% in 2010 to 48% in 2035 (IEA, 2011). In spite of that, if the EU is serious about decreasing its emissions by 20% (or even 30%, if the conditions are right) by 2020 from the 1990 levels, and in order to achieve the goal of cutting emissions by over 80% by 2050 which is the new goal set up by the EU's recently released Energy Roadmap 2050,²⁰ Europe cannot afford to antagonize its gas main supplier, Russia.

¹⁹ In the IEA-GAS Scenario, pushing up imports to around 450 bcm by 2035 (about 30 bcm more than in the New Policies Scenario), nearly 70% of total primary gas supply in the region. According to the EIA World Energy Outlook 2011, Europe's share of total inter-regional gas trade decreases to around 40% in 2035 (IEA, 2011).

²⁰ See: European Commission, DG Energy, Roadmap 2050: http://ec.europa.eu/energy/energy2020/roadmap/index_en.htm, Accessed in May 2012

It is uncertain how the EU aims to cut greenhouse emissions by 80 percent by 2050 and at the same time first, spur economic growth, second, turn increasingly towards renewables and third diversify away from Russia. How will European policy makers make these goals coalesce with shorter-term pressures to create jobs and reform their fiscal systems among other things, is still uncertain. Governments may impose new constraints for increasing energy efficiency, developing renewable sources and limiting all forms of pollution. These new developments are, however, shifting attention away from the short-term challenges of international geopolitics and fomenting the illusion that investment in renewables could obviate the need to take difficult foreign policy choices. As emphasized by Maugeri (2011 p.208) the ‘uncomfortable truth’ regarding renewables is that they have a very low energy and power density, so they can produce only limited amounts of energy. In part this is a technological problem because we still cannot exploit those sources fully, just as we cannot yet accumulate and store electrical energy on a large scale. That is why it is believed that combined-cycle gas turbines (CCGT’s) will be by far more flexible partners for renewables in the future, much more than coal plants. That is also why Europe will increase its natural gas consumption even more, to phase-out dirty coal and as a “bridge” fuel towards a more sustainable future. Especially after Germany’s denuclearization,²¹ decided in May 2011, Russia will continue to have the lion’s share in the EU gas markets. Not surprisingly, in feeding the EU with the natural gas that Europe needs in the long run to meet its goals by 2050, Russia will try to resist the delinking of the price of gas from the price of crude oil. Besides the climate battle there is another reason why alienating Russia might be risky for Europe. As we know, there is no parity in gas prices and the Asian regional prices are the highest. Presently, spot prices for gas in the US are around \$2.5/MMbtu to the other extreme of Asian spot around \$20/MMbtu, with Europe occupying the middle (geographic and price) ground. In light of this, there are several obstacles that might hamper a substantial impact of LNG in the European markets:

1. In Asia the price of natural gas is higher than the European regional price for gas, which naturally prompts flexible LNG exports to look more at that market. In fact, taking January 2011 as an example, the price of natural gas in North America dropped to 2,2 per million of British Thermal Units (Mbtu).²² At the same time the price of methane in Europe rose three to four times, to around 12,5 \$ per Mbtu. Finally, in the same month the price of gas in the Asian market reached the level of 17 \$/Mbtu. The reason why prices vary so greatly from one region to another lies in the fact that we still have mainly three regional gas markets, which are segmented. If a really global market for natural gas is the goal, then LNG should be pushed as an increasing part of the mix in all three regional markets, which would in turn stimulate an increasingly globalized market. However, building LNG terminals requires very expensive investments, that have until recently been delayed due to the high costs of regasification.²³
2. The second reason why Europe is in an unfavorable position to compete with Asia in terms of LNG is the fact that the Asian countries already possess the greatest capacity of regasification in the world (Maugeri, 2012) and are therefore able to absorb robust quantities of gas. Even the United States, whose policy-makers are

²¹ “Germany’s Nuclear Phase-Out Brings Unexpected Costs”, Der Spiegel, June 6, 2012

²² Which is the unit used in the world to indicate the calorific content of gas

²³ Even having a ready LNG terminal does not in itself secure supplies to that terminal because the producers tend to export where the prices are the most favorable in terms of gains. That is why it seems to be increasingly difficult to contract LNG supplies in Europe. On the contrary, new pipelines, especially those that are being built in cooperation with a producer, are a more certain option for securing supplies. Such pipelines have advantages. First, with a producer having a financial interest in the project, the chance that the pipeline will run dry seems very low. Second, connecting a newly built pipeline to a (new) gas field enables the pipeline to run on full capacity and increases security of demand for the producer (Van del Linde, 2011).

currently debating in Washington whether or not the country should export its shale gas in the form of LNG, is looking at the Chinese market and not the European one. To compete with Asia, Europe would therefore need to increase its prices for gas, with unpopular consequences for the final consumers.

3. Despite growing (LNG) supplies, gas imports are also predicted to remain very concentrated for large parts of the EU. The concentration of supplies is already relatively high for the EU as a whole, but is very concentrated indeed for the Northwest and Eastern European markets where Russian pipeline supplies dominate. LNG development will only marginally relieve the structural import dependence because LNG exports are unlikely to shift that high north and that east to include significant portions of German, Swiss and Eastern European markets. This situation is also due to long-term friendly relationships between some companies in these countries and Gazprom.²⁴
4. Significant regasification capacity has so far been built only in Grain Britain and Spain, while most of these projects in other states are still “on paper.”²⁵ For example, a country like Italy has only two functional regasification facilities²⁶ while 1 regasifier is currently under construction (Livorno) and 7 are in a planning phase.²⁷

Therefore, the still limited amount of LNG projects compared to the large number of pipelines and the rising demand for gas in Europe,²⁸ should dampen enthusiasm that LNG could rapidly break the dominance of long term supply contracts without risking supply security. Moreover, the political turmoil due to the Arab Spring could have a strong impact on LNG from the Arab producers exporting to Europe. Further, in March 2011 a giant earthquake and tsunami shook Japan, knocking out power and setting off a major nuclear accident at the Fukushima Daiichi plant. That in turn redirected Qatari and other smaller producers’ natural gas supplies to Japan on an even more massive scale because European hub prices are typically lower than the Asian ones. In summary, the initial optimism about LNG being able to provide the EU with ample diversification opportunities was tempered by the competition with the Asian region, including China, and in general, the rapid demand for energy that will be driven by that region in the coming years. A successful LNG exporter such a Qatar is contemplating alternative markets to the EU for its gas, such as the East Asian one - where the revenues are the highest. In fact, Japan and South Korea are the world’s largest LNG consumers, accounting for approximately 60% of global LNG imports in 2009. Moreover, according to CERA, Asia will remain the largest market for LNG²⁹ (see figure 1). Europe still struggles with its very deep recession and the pace of recovery has been slow. In this situation providing financial assistance for LNG terminals is hugely problematic.

²⁴ For example, E.ON-RuhrGas, for decades the owner of the only potential LNG site in Germany, has still not developed this site, thus preventing Germany from obtaining LNG. Also, although the LNG import capacity of ports in the European Union, currently at 108 billion cubic meters, is expected to increase during the next five years, this expansion will not benefit the countries with the greatest vulnerability to an interruption in the flow of Russian natural gas, namely the East European countries.

²⁵ LNG Terminals in Europe, GLE presentation to CEER/LENG Workshop – Session I, September 6, 2011, Available at: <http://www.gie.eu.com>, Accessed in September 2012.

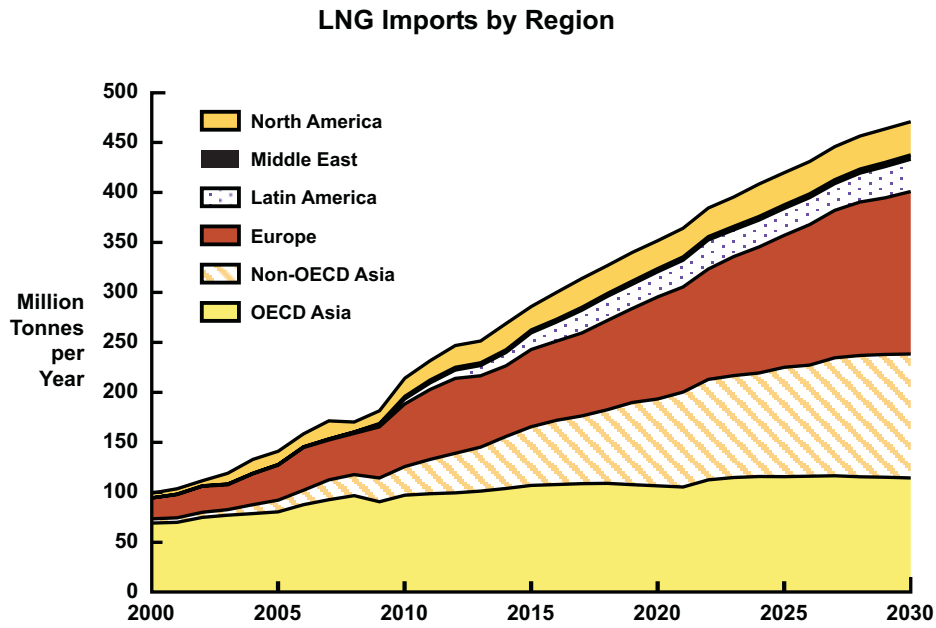
²⁶ Panigaglia and Rovigo

²⁷ “The Future of the Natural Gas Market in Southeast Europe,” World Bank Publications, Jul 20, 2010, p. 128

²⁸ It is intended here in the longer-run - especially due to environmental concerns and a EU action plan that relies heavily on natural gas. See: http://ec.europa.eu/clima/policies/roadmap/index_en.htm.

²⁹ Countries like Japan and Korea have negligible domestic gas resources and meet nearly all of their demand with LNG. Much of Asia, with the exception of Japan, emerged from the economic recession faster than Europe – a boom for LNG trade.

Figure 1.

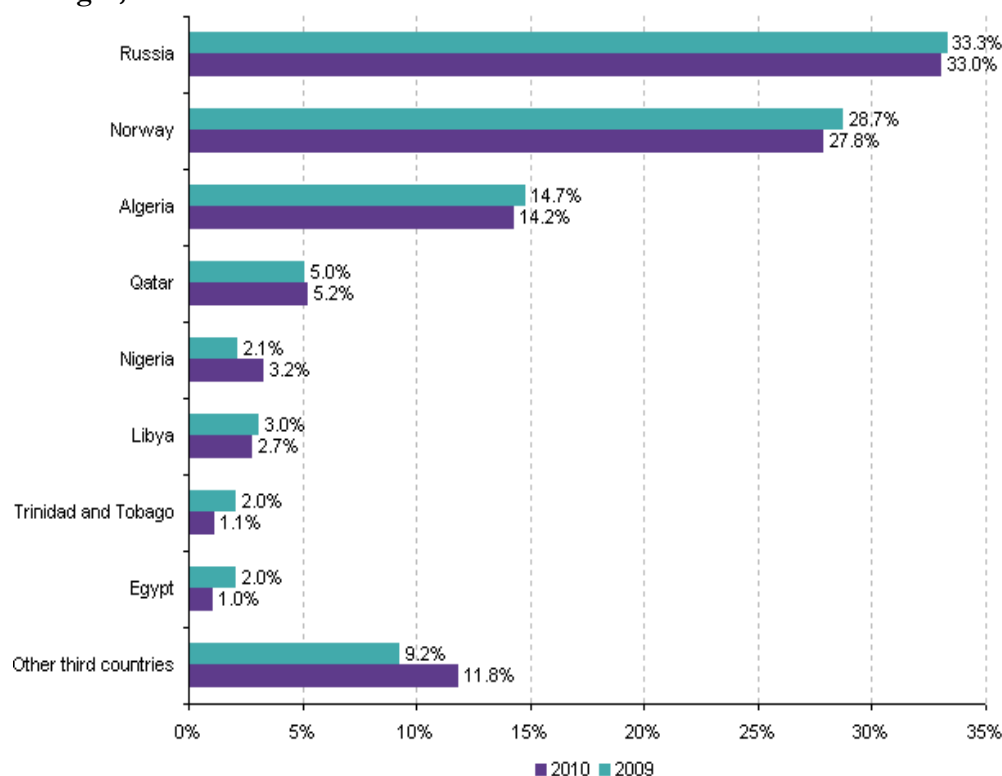


Source: IHS CERA, US Energy Information Administration and IEA.
01211-1

For the time being, Gazprom handled the perfect storm that hit the global gas markets with a double tactic of gradually adapting its contractual structure to the new situation, plus avoiding a “price war,”³⁰ which would entail much larger losses for a producer that in absolute terms retains majority shares in the European markets (see figure 2).

³⁰ i.e. rather losing portions of market share rather than putting the price down

Figure 2. EU-27 imports of natural gas - percentage of extra-EU imports by country of origin, 2010



Provisional data for 2010

Source: Eurostat

Therefore, Gazprom is waiting for fundamentals to tighten, while being aware that more flexibility in the long-term contracts will be needed. Until now, Gazprom has responded by reducing its output from existing fields, and postponing all the new investment to offset its lost market share in the EU markets.³¹ For example, in September 2012, Gazprom confirmed it was pulling the plug on developing the huge Shtokman gas field, because of the cost.³² Not too long ago, the Shtokman field was considered a top priority to reverse the country's declining output.³³ The Russian government criticized Gazprom unusually sharply in March 2012 for falling behind its development plan for storage capacity and gas production (Westphal, 2012). Gazprom's strategy seems perceived as dangerous even by the Russian state, however, it seems that for the time being this is the way the company has chosen to "punish" the European customers for their requests of price reduction. The complexity and uncertainty of this situation might turn out risky for the EU.

³¹ "Gazprom cuts European sales target, raises price", Euractiv, 10 April 2012, updated 04 September 2012

³² The Economist, September 1, 2012, p. 8 and The Wall Street Journal, "Gazprom Postpones Development of Shtokman Field," August 30, 2012.

³³ In the words of a Russian energy expert: "It was postponed, postponed and postponed and only when everybody understood that it wouldn't happen, just then it was announced that Gazprom is postponing it again for an indefinite period of time. The official statement is very unclear; we talked to our partners and we decided that the project as such is too expensive for now and the FDI won't be taken until 2014. It can be understood in both ways: whether it was just postponed until 2014 or it was completely terminated. It is a question of understanding". - Interview with the Author in October 2012

In Europe, concerns over sovereign debt and the Euro crisis have distracted the governments and shifted attention away from energy policy, boding ill for agreed gas governance objectives. At the same time, Russians are at pains to remind the Europeans that companies have specific long-term visions in order to commit to long-term investments without the fear of ending up with obsolete investments due to policy changes. End-consumers, on the other hand, understandably have a short-term view that makes them put the highest value on price and opt for the cheapest option available. A new customer has little reason to opt for piped Russian gas when cheaper LNG is available. However, once again, a long-term consideration is entering in our picture. As demand in Europe is expected to grow steadily (IEA 2011), it follows that Europe's gas import dependency will continue to grow. Europe's import was 50% of primary gas supply in 2010, and this is expected to rise to 70% in 2035 (IEA 2011, p.33). Since European "shale gas" will not be a 'game changer' in the medium term due to impediments like a much more restrictive environmental law than in the US and a generally different geological formation in the "Old continent," even though the nexus between oil and gas will be loosened in the gas pricing structures, long-term contracts' supremacy will not be challenged in the medium term. Thus, the only way to enhance competition would be through increasing the shares of LNG in the European market. But again, as we have seen above, for Europe that is not an easy undertaking. Thus, LNG will not change the fundamentals in the future, nor will a 10-bcm-diversification pipeline from Central Asia.³⁴ Further, at the moment US shale gas seems firmly tied to the American soil, and the European shale reserves are likely, for political reasons, to remain underground. Therefore, although Russia's market position in Europe has been temporarily weakened as a result of "the gas glut" in the long-run dependence on imported Russian pipeline gas will continue to grow, to the depletion of indigenous resources. In sum, Russia should not be avoided or demonized; on the contrary Europe's gradual path to market-based gas pricing should go through engaging all parties, and certainly its main gas supplier. Lastly, despite the multiple obstacles to LNG that we have seen in this section, diversification remains an inalienable imperative at the EU political level. In order to achieve it, the development of unconventional natural gas exploitation is regarded with keen interest. Some observers believe that it could contribute to the EU's domestic natural gas production in the future.³⁵

1.5 Unconventional gas: quo vadis Europe?

There is no doubt that one of the last decades' biggest transformations in the gas sector has been the American "shale gas revolution." The dramatic increase in shale gas has been made possible by significant improvements in the two related technologies - hydraulic fracturing and horizontal drilling, that created the "shale gale" - the explosive growth in natural gas production from shale rock. US shale gas production has increased from almost nothing in 2000 to 34% of total U.S. natural gas output in 2011, with some analysts projecting a 50% share by 2035 (CERA, 2010). Shale reserves are also abundant in other parts of the world. This awareness combined with Europe's increasing dependence on external suppliers has raised the interests in turning some parts of Europe into a "shale" laboratory. However, the situation in Europe is quite different from the American one and there are several obstacles to a real shale boom in Europe. Hence, how worried should Russia be that shale could beat

³⁴ i.e. Nabucco West or TAP

³⁵ For a recent discussion see: Beckman, K. Interview Fatih Birol, Chief Economist of the International Energy Agency "European countries missed a big opportunity by closing their doors to shale gas in a dogmatic way," European Energy Review, 19 November 2012.

its gas in Europe? In this section we look at the European shale potential and some of the obstacles companies will face in replicating the US shale gas revolution in Europe. Then we discuss whether unconventional gas will represent a real challenge for Gazprom's business in Europe in the years to come: I begin by looking at the challenges that Gazprom faces by potential new competition from shale gas in its traditional export market. I then analyze possible Russian responses in order to avoid unconventional gas outcompeting it in Europe, as well as the potential implications of unconventional gas for the structural development European gas markets.

1.5.2 Impediments on the Old Continent

Understanding the conditions that have made shale gas exploitation successful in North America is fundamental to an analysis of the potential of shale gas in Europe (Geny, 2010). Energy experts seem to agree that several factors that triggered modern unconventional gas production in the US are hardly replicable in the EU:

- A high level of geological knowledge
- Tax credits
- The technological innovation of "horizontal drilling"
- Favorable environmental legislation
- A strong oil and gas service industry
- Easy access to gas pipelines

In addition there are many operational, regulatory and commercial challenges to the development of unconventional gas resources, which are specific to Europe:

- European shale gas deposits are geologically much harder to extract than those in the US
- Drilling is quite land intensive, and this could be very disruptive in densely populated Europe
- Environmental legislation is much tougher than in the US
- There is no comparable onshore oil and gas service industry to provide drilling rigs and other equipment
- The gas transmission business in Europe is still dominated by giant national gas companies that may not welcome the new sources

Despite the many restrictions, some energy experts believe that Europe's unconventional gas (UG) reserves could be several times bigger than its conventional gas reserves and that the shale gas boom in the US can be replicated in Europe.³⁶ The US majors – who largely missed out on the first stages of shale growth in their home patch – certainly seem to think so.³⁷ Yet obstacles in Europe range from local opposition and national policies to the lack of infrastructure and a much greater population density. The main impediments, however, are of political nature. France has already instituted a moratorium on shale gas drilling out of ecological concerns. The Netherlands doesn't need to bother with shale given that it still has the Groningen fields. Fostering its 'Energiewende,' Germany has ended up splitting its energy mix between lots of wind and even more lignite coal, using Russian gas to fill any residual gaps. In the UK, it is only a handful of Conservative parliamentarians who think

³⁶ See Kuhn and Umbach (2011a) Strategic Perspectives of Unconventional Gas: a game changer with Implication for the EU's Energy Security, EUCERS, Strategy Paper

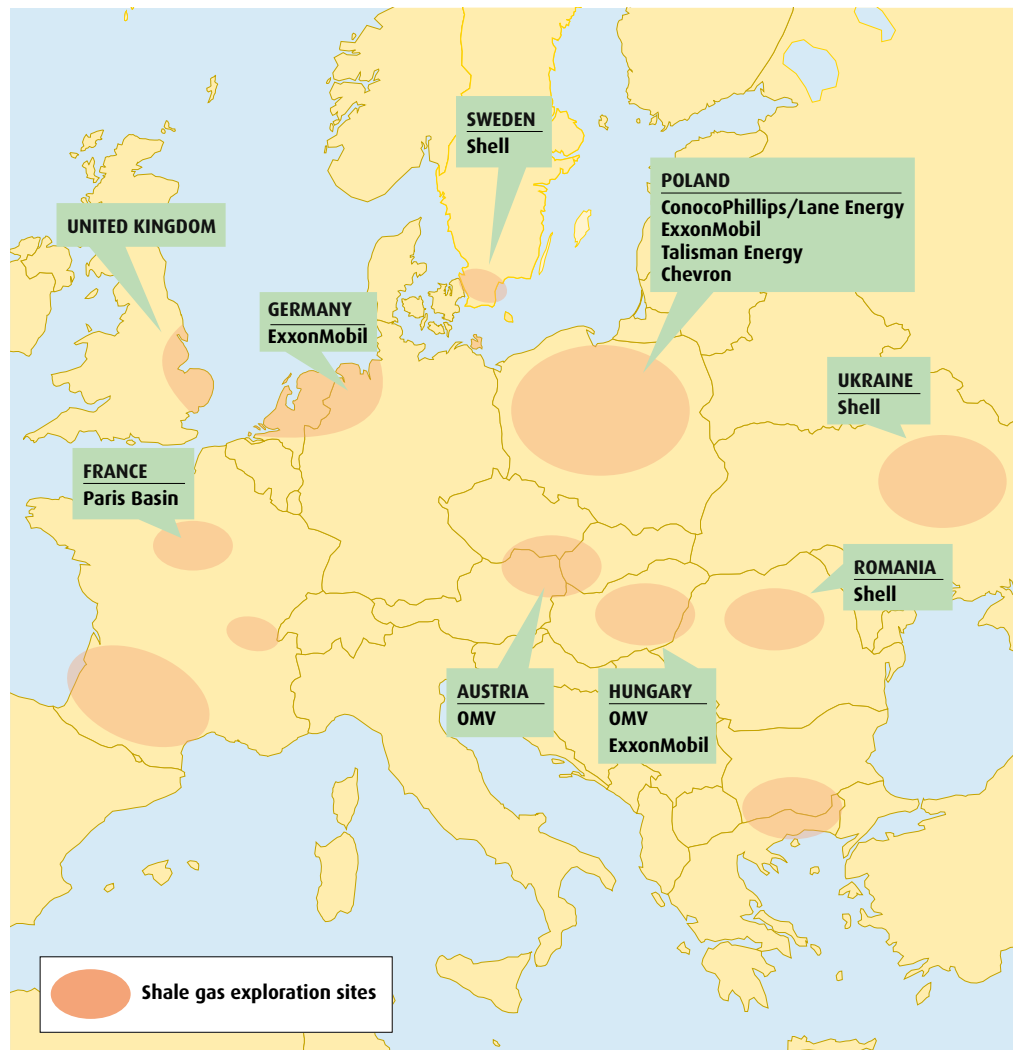
³⁷ Exxonmobil, who recently acquired US shale gas producer XTO, is active in Hungary, in Poland and in Germany, and has teamed up with German upstream company Wintershall. Chevron and Conocophillips are also hunting for shale gas in Europe, particularly in Poland. Also European majors, such as Shell, Eni and OMV are all active in developing potential shale gas plays in Europe.

shale might offer a British version of the US shale revolution in North West England (Hulbert, 2012). Italy has been oversupplied with Russian and on-going Libyan deliveries. Moreover, as never before the Nimby phenomenon, i.e. “Not in my backyard”, functions perfectly. At last, the EU’s unity was achieved in one thing: no one wants hydraulic fracking and drilling in its own backyard. US energy giant Chevron suspended shale gas exploration activities in Bulgaria and Romania following ecological protests.³⁸ A couple of wells in Hungary have been abandoned as unpromising. In Poland, the country considered most promising, only eleven wells have been drilled so far (compared to the Barnett Shale in Texas where 15,000 wells have been drilled). In most of the rest of Western Europe, environmental concerns may make gas extraction impossible irrespective of whether the geology proves suitable. Still the imperatives of diversification will likely fuel the hopes for unconventional gas resources in some parts of Europe – most notably in Poland and Ukraine. In February 2011, Ukraine has become the latest European country to open up its shale gas reserves to exploration, a move that could help to reduce heavy dependence on increasingly expensive gas imports from its eastern neighbor Russia.³⁹ However, there might be political troubles here as well. As noted by Hulbert (2012) as quickly as most of American major came in Eastern Europe, many of them have since left. That is probably, as Hulbert puts it: *“because Russia is playing hardball with CEE and South East European states. No sooner had Exxon Mobil signed agreements to develop West Siberian tight oil plays in Russia, it pulled the plug on Polish shale exploration. As Shell is no doubt about to find out in Ukraine, developing CEE shale and Russian upstream reserves is not going to be an either/or option. Companies may face a difficult choice: either you do business in Russia or business in CEE – not both.”* Moreover, given that so far there has been very little drilling in Europe, enthusiasm that new shale gas supplies will compensate for declining conventional supplies is premature. At the moment the European market is over-supplied, prices on the 'spot' market for short-term gas contracts have fallen significantly, and the medium-term outlook is highly uncertain. Hence it is not clear whether European UG will be able to compete with LNG and pipeline gas. This leads our discussion to the next question: can shale beat Russian gas in Europe? I tackle this question in the next section.

³⁸ See: *The big fracking chill in Eastern Europe – Report*, European Energy Review, 10 December 2012.

³⁹ “Ukraine opens shale gas reserves to exploration”, Financial Times, By Roman Olarchyk in Kiev and Guy Chazan, February 23, 2012

Figure 3. Shale Gas exploration sites in Europe



Source: *Shale gas in Europe: A revolution in the making?* Gas Matters, March 2010

1.5.3 Can shale beat Russian gas in Europe?

Even if unconventional gas probably won't be a "game changer" in Europe at least for a decade or more, the "shale gale" in the U.S has already had a significant indirect impact on the European gas market. The disappearance of the US as a gas importer has released huge amounts of LNG on European and Asian markets. These additional volumes of LNG combined with the recession and slow recovery in Europe, put downward pressure on all gas prices, and thus have forced pipeline gas suppliers such as Norway's Statoil⁴⁰ and Russia's Gazprom to re-negotiate contracts with their biggest European customers. These events have already forced major adjustments in Russian gas business plans, its investment priorities, and schedules and negotiating strategies. But fresh challenges lie ahead. The clash of Russian pipeline politics is further unsettled by the potential for a new alternative - unconventional European gas supplies. This multitude of changes—irrespective of whether

⁴⁰ Statoil has already signed supply contracts with Centrica directly linked to UK's hub prices (Hulbert, 2012)

or not European shale gas becomes a game changer—will have a significant impact on EU-Russian relations, national economies and, ultimately, on consumers. However, if we try to assess more closely whether European shale gas will be able to compete with Russian pipeline gas in the next decade, considering all the obstacles mentioned before, the most proximate answer is no. European shale gas will most likely not outcompete Russian gas in the next decades. I propose to look at four main factors that will enhance the role of Russian gas despite the potential developments of European UG:

1. Natural gas is an attractive “transition fuel” towards a low-emission global energy mix. Especially in Europe we can expect an expanded role of the “greenest” fossil fuel in the effort to meet European targets for 2050 incorporated in the EU’s Energy Roadmap 2050, which in turn makes the case for an increasing role for Russian natural gas.
2. Following Fukushima, climate targets in Europe are even more ambitious. Angela Merkel’s government decision to phase out nuclear power leads to greater gas imports and a jump in gas prices.
3. Gas prices are at a historical low, right now. This is not a sustainable level and it will go up. Moreover, after this temporary situation due to the LNG shipments re-routed from the US to Europe, LNG will go to Asia where the prices are higher.
4. The liberalization of the European gas market and the challenging of long-term gas contracts have created greater leverage for the EU. However, the gas transmission business in Europe is still dominated by giant national gas companies that may not welcome new sources such as shale gas, and that have strong interests in maintaining the status quo and protecting the long-term partnerships with Gazprom.

What does all this mean for Gazprom? Regardless of whether the depressed prices and demand in Europe are a temporary phenomenon or a new trend, Gazprom will have to realize that many new options are opening up for Europe in the years ahead, and it will have to struggle to protect its market share and maximize its long-term revenues. Signs of Moscow’s fear of losing further markets share in its most important export market have reached the Russian Duma. On April 11, 2012, in his final address to the Duma before he took over as president in May 2012, Vladimir Putin urged his country’s gas industry to “rise to the challenge” of shale gas as the United States and some European countries forge ahead with developing “the controversial” energy source. Putin said: “*US shale gas production may “seriously” restructure supply and demand in the global hydrocarbons market. Our country’s energy companies absolutely have to be ready right now to meet this challenge.*”⁴¹ In the past years, Gazprom has insisted that there was no acceptable alternative to oil-linked pricing and that the gap between long-term contract and spot prices would close by 2012. Putin’s words demonstrate that the Russian government is no longer trying to minimize the importance of the changes in Europe, and is instead focusing on ways how to deal with this external shock that hit Gazprom and that is changing the configuration of global markets. Russia knows that the decoupling of gas prices from oil prices as LNG and shale gas are competing with piped natural gas – might offer an alternative to their long-term contracts. It is also painfully aware that the increasing “connectedness” of gas markets, has created a market where developments in one region have a worldwide impact. In fact, as noted by Jonathan Stern (2012), Gazprom might need to make uncomfortable choices between volume and pricing of European exports over the next decade. In fact, Gazprom has abandoned plans to increase sales to Europe in 2012, saying that it faced stiffer than expected competition from LNG

⁴¹ “Putin fears shale gas competition”, Euractiv, published 12 April 2012, updated 18 April 2012. Moreover, while admitting last year that there has been a “real shale revolution”, Putin said Russia must find “mutually acceptable forms of cooperation” with consumers. – see *Russia’s wounded giant*, the Economist, March 23, 2013

and lower spot market prices.⁴² Therefore, Gazprom will need to diversify as its European export model suffers. It is expected that Gazprom will operate in three distinct markets: (1) the traditional European market; (2) a de-regulated and mixed domestic market; and (3) a new Asian market [Kuhn&Umbach, (2011b), p.220]. Hence, even if unconventional gas does not prove as a pan-European game-changer, it will still have very significant consequences on regional gas dynamics, as even admitted by Putin himself.⁴³

Concluding, gas is likely to become increasingly important at the expense of coal and nuclear power, therefore Russian gas imports will increasingly dominate the European energy mixes. The 'gas bubble' will inspire a redefinition of the long-term contracts clauses but Gazprom's share in Europe will continue to grow. In 2011, Gazprom's share in the European market grew to 27% from 23% in 2010.⁴⁴ The company expects to boost its share up to 30% by 2020. However, the fact that the international gas market is continually re-inventing itself makes forecasting difficult. In such a situation Europe should concentrate on remaining an attractive market. The Russians will have to include some clauses for renegotiations of the prices, when the ratio between oil and spot gas prices de-links in a considerable way again, but the need for financial security to make investments in upstream projects, will preclude a complete abandoning of long-term relationships.

In this complex setup, unconventional gas is to a certain extent "a wild card" for the EU-Russian relationship. Unconventional gas is nowadays the new policy option for European countries, giving buyers more leverage to renegotiate the Russian oil-indexed high gas price demands that are included in long-term contracts. However, Europe will need to guarantee some 'security of demand,' otherwise it would not be surprising to see Gazprom more active in the East, focusing on producing easily transportable liquefied natural gas at the Barents Sea deposit, to be shipped to the Asian market, as the company first proposed in April 2012. Indeed, I would argue that, if US shale gas won't be exported, if Europe fails to develop indigenous supplies and if gas-thirsty Asia locks-up excess supplies; Europe could find itself in a troublesome position of scrambling for more Russian gas. In fact from Gazprom's viewpoint, Europe's growing political reluctance to become over-reliant on Russian gas, accompanied with increasing new competition both from LNG, pipelines from Central Asia and shale gas; strengthens the case that European customers could no longer be relied upon to commit to the huge volumes from new upstream projects. As a consequence their commercial viability would need to be underpinned by domestic sales and by an effective turn towards the Asian markets to guarantee a minimum rate of return (Henderson, 2011). In fact, in Russia the need to find new export markets, a long-standing idea in the academic and energy industry circles, is gathering more and more momentum. This, finally, links back our discussion to the 'paradigm shift' debate. As noted earlier, for a paradigm change to occur, it has to be endorsed by the crucial actors. As Gazprom's relations with its traditional European partners are worsening,⁴⁵ it seems that this process has provoked a fundamental

⁴² "Choosing between 154 bcm at a lower price and 150 bcm at a higher price, we choose to export 150 billion," Alexander Medvedev, Gazprom's deputy CEO, was quoted as saying by Russian news media. Medvedev stressed that 150 bcm is a minimum level of supply in terms of Gazprom's long-term contracts. "Gazprom cuts European sales target, raises price", Euractiv, 10 April 2012

⁴³ However, it should be noted that Gazprom still has formidable room for price maneuvering. Since the Russian budget remains heavily dependent on incomes from oil and gas exports - Russia will not passively wait to lose its high profit margins on the European gas markets. If needed, its profit margins will allow for substantial price reductions, to slash the competitors out of the game. Moreover, Gazprom will continue its divide and rule policy, negotiating with EU gas majors bilaterally and offering better deals to Russian long-term friends (which explains why Germany pays the lowest prices in Europe). An antitrust probe launched by the European Commission has recently put under threat Gazprom's old way of doing business; i.e. using the lever of being able to charge some European countries more than others.

⁴⁴ Euractiv, "Gazprom cuts European sales target, raises price," April 10, 2012

⁴⁵ Due to, among other things an anti-trust investigation started by the European Commission on the grounds that Gazprom failed to "unbundle" its activities.

shift in Russian public perception about the reliability of the European partners, with more eyes turning towards the Middle Kingdom and the four Asian tigers.⁴⁶ This is a risk that could force the EU to rethink its strategies.⁴⁷

1.6 Conclusions

This article has discussed the most fundamental challenges that the EU and Russia will be facing in light of the changing paradigms in the gas markets, but also in light of the broader changing paradigms in the global political order. I have argued that the current transition in the natural gas contractual and pricing structures will widen the gap in the immediate interests between the EU's corporate sector and Gazprom, which will entail even stronger governance challenges and make multilateralization of the EU-Russian energy relationship unlikely. Companies will operate in rapidly changing and highly uncertain environments and the volatility of the gas markets will enhance their willingness to maintain free hands from multilateralized binding agreements. Currently, the gaps between Russian and the EU's immediate interests are widening, and in such a situation there remains little chance that the EU's effort to institutionalize the energy relationship through the ECT and/or a new PCA will succeed, amidst an increasingly strained relationship between the European energy companies and Gazprom. Besides, the main sentiment inside Russia is that such multilateral comprehensive instruments are of very limited utility and that the actual meetings in the framework of the EU-Russia energy dialogue reflect more a simulation than a genuine effort towards progress.⁴⁸

It is difficult to predict whether a real decoupling of oil and gas prices will happen in the future, in a shorter-term perspective, a hybrid model will be kept and a gradual adaptation of long-term gas contracts towards more flexibility will continue. Growing insecurity in the European gas markets will exacerbate economic and political rivalries among European firms and countries, which will spur a patchwork of state practices at the country level coexisting and even rivaling each other, with the EU Commission-guided approaches trying to harmonize all the others from the top. The private sector approach will fluctuate between somewhat welcoming the EU-level foreign policy strength in tempering Gazprom, to complaining strongly on specific issues where the national room for maneuver is constrained by European-level policies. Presently, the logic of the European capitals and that of Brussels are still far from being aligned. In all, the new gas governance paradigm in the European markets will be characterized by extreme fragmentation and a gradual adaptation to new contractual regimes and new pricing mechanisms. This analysis has examined how certain events can indeed be central to the explanation of paradigm change; in our case the exogenous driver for change that came from the American shale gas revolution, has been the crucial event that made the journey towards a more liberalized gas trade possible. This paradigm shift would certainly not have been possible without the European Commission's regulatory efforts that underpinned, and in the final analysis forced a switch. That in turn made the journey towards a binding multilateral governance institution regulating the EU-

⁴⁶ In March 2013 after years of tough talks, which had failed to yield a deal on gas supplies, Russia and China have agreed to everything related to pipeline exports apart from the price. See "Russia, China find compromise on gas deal after 15 year standoff", Reuters, Mar 25, 2013

⁴⁷ Many pundits point out that options for Europe are actually increasing, due to the discovery of gas fields in Africa (i.e. Mozambique) and the eastern Mediterranean. Yet, while Mozambique gas will most likely be destined to the East Asian market where prices are the highest, the new big offshore gasfields in the eastern Mediterranean will most likely remain unexploited in the next 3-5 years due to political quarrelling between Cyprus, Turkey and Israel (see: *Gas in the eastern Mediterranean - Drill or quarrel?* The Economist, Jan 12th 2013, and *The Cypriot gasfield - Hot air*, The Economist, Mar 23rd 2013). In this situation, the new MoU agreed in March 2013 by CNPC and Gazprom on the delivery of 38 bcm per year gas starting from 2018 (see: *Russia, China find compromise on gas deal after 15 year standoff*, Reuters), could prompt Europe to deliver a more consistent approach vis-à-vis Russia.

⁴⁸ Author's interview with a Russian industry insider, October, 2012

Russia energy relationship even longer and bumpier, giving a symbolic blow to already troubled EU-Russia institutional cooperation.

Within Europe there seems to be a cautious consensus that gas should be “the fuel bridge” that will gradually erode dependence on coal, and lead to a more environmentally friendly tomorrow. In fact, in a world where natural gas consumption is growing⁴⁹ the EU should look for a constructive dialogue with all the producers and particularly with its main supplier. In the current situation of growing gas-to-gas competition in Europe, Russia might feel unfairly discriminated. Thus, it will be crucial for the European Commission to engage Russia in a fruitful dialogue where the EU should make Moscow feel that its views as a producer are respected as those of an equal partner. As noted earlier, if the US decides to keep its unconventional bonanza at home, and the EU for political or economic reasons does not develop its own shale, LNG will not be sufficient to fill the gaps. In that situation, if the EU fails to prove as a reliable customer, in the future it might find itself competing fiercely with Asia for Russian gas. For these reasons, it is not wise to cut relations with Gazprom. In today’s fragmented and polycentric world, a new challenge will regard incorporating new emerging regions (such as the Asian Pacific) and new global emergencies, such as climate change in a coherent global energy governance system. The question will be whether the new rule-setters, the Asian countries, will want to move to a less cooperative order built on spheres of influence or rather renew and expand today's system of multilateral governance arrangements. According to Ikenberry (2011), China is increasingly working within, rather than outside of, the Western order. He argues that China and other emerging great powers do not want to contest the basic rules and principles of the liberal international order, instead they wish to gain more authority and leadership within it. Regardless of whether this analysis proves accurate or not, the EU and Russia will find themselves together in this new challenge, even more considering that they are both in relative decline, at least compared with the robust and rapid growth of the new Asian centers of power.⁵⁰ The common challenges that these two actors will be facing in the coming decades offer, at least in principle, the political opportunity and momentum to align their interests.

⁴⁹ And by some estimates may outstrip coal and even oil in a quarter of a century (IEA, 2011)

⁵⁰ In that sense, I would argue that Russia and the EU will find they have a lot in common by virtue of necessity and the rapid rise of new state and non-state political units (i.e. the rebels in Syria).