



# Energy institutional and organisational changes in EU and Russia: Revisiting gas relations

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## HIGHLIGHTS

- In this study, we analyse the evolution of EU–Russia gas relation since the 1990s.
- The problems of defining new gas relations between the EU and Russia stem from a clash of values.
- The problem: Russia's rejection of the EU's power to enact rules for the gas industries and markets.
- For the EU and its gas companies, access to Russia's hydrocarbon resources is a key question.
- For Gazprom, the question is whether it can define flexible strategies on the European gas market.

## ARTICLE INFO

### Article history:

Received 2 January 2012

Accepted 22 November 2012

### Keywords:

Russia

EU

Gas industry

## ABSTRACT

This article tries to shed light on why gas relations between the EU and Russia, which were previously stable, have deteriorated since the introduction of institutional changes in the two regions. After identifying the areas of divergence in the context of European gas market liberalization, we then attempt to examine them in the context of the differing approaches to structuring this sector. The model of vertically unbundled network industries promoted by the EU is no longer the one that Russia intends to implement in its gas sector, despite the big changes taking place in its domestic market. All this is happening in a context where the economic stakes are very high. For the EU and its gas companies, access to Russia's hydrocarbon resources is a key question. For Gazprom, the question is whether or not it can define strategies that are flexible enough to adapt to the changing conditions in the European gas market.

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## 1. Introduction

Gas security and economic risks are particularly important issues in the relations between the EU and Russia. Gas relations between Russia and the EU are characterized by strong interdependence, which is recognized in the *Roadmap of the EU–Russia Energy cooperation to 2050*. But the dialogue on energy matters initiated in 2000 at the Paris summit has been plagued by persistent lack of understanding between the two parties, making it difficult for them to reach agreement on a new energy partnership. The literature most often focuses on differences rather than on the importance of shared interests (Van Der Meulen, 2009). Essentially, as far as the European side of the debate is concerned, it is a matter of ensuring the security of the EU's supply of fossil fuels. Russia's response to this concern over security is the “guarantee of gas demand” in the long term because it needs to

make heavy investments to expand its export capacity. The contractual relations based on long-term contracts during the 1970s and 1980s led to relative stability in energy trade between the two regions. But since the mid-1990s, this trade has been destabilized by two “institutional shocks” that appear to have caused more conflict than cooperation. The process of opening up the EU's gas industries to competition and the desire to create a single gas market led to an in-depth reorganization of the sector. In this context, the EU intends to redefine the way in which it manages its relations with its main suppliers by attempting to impose a model based on competition, unbundling of network industries and privatization. The collapse of the Soviet Union and Russia's desire to create a “market economy” were initially in line with this approach. But perhaps it is not sufficient in the new era.

The differences of opinion seem to lie in rules and standards that are based on values and beliefs which, according to the neoinstitutionalist approach developed by North et al. (2010), reflect two different social orders. Market institutions operating in two different contexts cannot have the same effectiveness and efficiency. The question as to whether the international standards

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generated by the EU through the Energy Charter are consistent with Russia's institutional environment is thus a key one. The Russian state's growing role in the hydrocarbons industry, exerted through various state-controlled companies, through the imposition of tougher conditions of access to resources but also through the introduction of some form of competition, can be seen as an attempt to introduce an organizational model more in keeping with the country's institutional environment. An approach based on the preferential use of state instruments conflicts with the multilateralism and principles of competition of the EU, which advocates market opening, unbundling and even the privatization of the gas sector. The EU's normative power is thus in contradiction with the institutional environment of the Russian energy sector. In this context, it is unlikely that standards based on international rules and institutions could alone be used to structure energy relations between the EU and Russia. Russia's withdrawal in 2009 from the process to ratify the Energy Charter Treaty illustrates this point and undoubtedly marked the end of the EU's attempts to stabilize its energy relations with this country through the sole means of a legally binding multilateral framework (Cameron, 2010).

However, the various reforms that were introduced produced new market players, such as the Russian company Gazprom, which has attempted to present itself as a company able to define a certain number of strategies in its main export market – the EU – more specifically in cooperation with European gas companies. Thus, on the fringes of the changes taking place in the European gas market, European and Russian companies may share new kinds of common interests.

The aim of this article is to try to shed light on why gas relations between the EU and Russia, which were previously stable, have deteriorated since the introduction of institutional changes in the two regions (Section 1). After identifying the areas of divergence in the context of European gas market liberalization (Section 2), we then attempt to examine them in the context of the differing approaches to structuring this sector (Section 3). In this kind of context, without prejudging other positive developments in global cooperation, we can nevertheless seek to determine the reasons for this persistent preoccupation with security in future gas relations between the two parties. This debate is important at a time when the EU is trying to define a comprehensive strategy for its external relations in energy in order to manage the security of its energy supply (European Commission, 2011a).

## 2. Quantitative and qualitative changes in UE–Russia gas relations

Since the end of the 1960s, gas trading relations between the EU and Russia have been characterized by interdependence based on the reciprocal interests of each party: the EU is Russia's main export market while Russia is the EU's main external supply source. Two major periods can be distinguished. The period from the 1970s until the mid-1990s was relatively stable as far as contractual relations were concerned, while since the start of the 2000s relations have been more turbulent, marked by tension and conflicts, in particular at the time of the natural gas transit disputes with Ukraine.

### 2.1. Gas interdependence between the EU and Russia

The strong interdependence in gas relations between the EU and Russia can be clearly illustrated by a few figures: 40% of the EU's natural gas imports come from Russia. The EU has estimated that its total gas imports could represent 84% of its consumption

**Table 1**

Dependence of some EU countries on Russian gas in 2011.

Sources: Gazprom, Annual Report 2011, Moscow; BP Energy Statistical Review, 2011.

Countries	Volume Bcm	Gazprom's market share (/gas imports), %
Germany	34.1	36.7
Austria	5.4	51.0
Bulgaria	2.5	100.0
Estonia	0.7	100.0
Finland	4.2	100.0
France	8.5	18.2
Greece	2.9	78.9
Italy	17.1	24.6
Latvia	1.2	100.0
Lithuania	3.2	100.0
Hungary	6.3	85.0
Poland	10.3	86.1
Czech Rep	8.2	57.5
Romania	3.2	100.0
UK	12.9	26.6
Outside EU: Turkey	26.0	56.2

by 2030, compared with 57% in 2007, which would make it considerably more vulnerable to supply risks (European Commission, 2007).

Gazprom exported 157 Bcm of gas to Europe and Asia in 2011. However, the dependence of each state on gas imports from Russia varies according to their internal gas resources, energy policy (energy mix) and their strategies to diversify supply sources. The Central European and Baltic countries are characterized by a strong path dependence, a consequence of trade relations forged by the former Soviet Union and the former COMECON (Council for Mutual Economic Assistance) which grouped together the countries with centrally planned economies of Central and Eastern Europe. Consequently, the dependence of these countries on Russia is above 70% (cf. Table 1), but in terms of volumes imported (and revenue), Germany, France, Italy and the UK are the key markets in Russia's strategy. For a long time, Russia's gas policy has made extensive use of this segmentation of the European markets.

Similarly Europe, with 70.8% of Russia's total exports, represents a vital market for Gazprom, and one that is profitable, especially when compared with its domestic market, which is dominated by low government-regulated natural gas prices. Russia's domestic natural gas prices are still based on a pricing system introduced at the end of the 1990s to encourage consumers to use gas instead of oil and coal. They are as low as a quarter of the price charged on the European export market (Jensen, 2010). The recent increases in domestic tariffs (more than 20% in 2010 compared with 2009<sup>1</sup>) are not yet sufficient to make up for existing differences. The same is true of sales to CIS countries, formerly based on a cost-plus approach and therefore much less profitable than sales to the EU, dominated by the netback principle (Konopliankin, 2010).

The EU is destined to remain Gazprom's main export market for some time to come, despite its desire to diversify to Asia. In Russia's long-term energy strategy published in 2010 Asia is forecast to represent 20% of gas exports in 2030 (Ministry of Energy of the Russian Federation, 2010)<sup>2</sup>. A far-reaching diversification policy can only be envisaged for the long term, given the

<sup>1</sup> Price rises and market reform in Russia, a long and winding road. *Gas matters*, June 2011.

<sup>2</sup> In 2010 Russia signed an agreement in principle with China for the export of 30 Gm<sup>3</sup> of natural gas starting in 2015. But the thorny question of price has yet to be settled. (Gazprom's slow boat to China, *Petroleum Economist*, Nov. 2010).

enormous obstacles that must be overcome, not least the problems of infrastructure and development of the gas fields in Eastern Siberia. In addition to the question of price and types of contracts, which still have to be negotiated, the Chinese would appear to wish to check the viability of their unconventional gas potential and to consider that in the short term the Turkmen gas pipeline will be able to deliver sufficient quantities to meet their natural gas demand<sup>3</sup>.

## 2.2. The return of the question of security in the 2000s

Gas trade relations between the EU and Russia date back to the end of the 1960s. The first contract was signed in 1968 between the Soviet Union and Austria, followed by a contract with West Germany (1973), and then Italy and Finland (1974). It was not until the 1980s, however, and the first major contracts with the EU countries that gas trading between the two regions became really substantial. Trading relations were established on the basis of bilateral agreements in the form of long-term take-or-pay contracts concluded with Germany, France and Italy. This period was characterized by stability in gas relations between the two regions, at least in economic terms. TOP contracts were designed so that the price risk and volume risk could be shared between the producer and the consumer all along the chain, and in doing so they provided security for both parties (Boussena, 1999). These contracts enabled stable, mature gas supply systems to be developed and ensured that substantial investment could be made in production and transmission. In particular, long-term contracts meant that producers could secure the financing needed to develop their gas deposits and build the necessary export infrastructures. This kind of contractual relationship was in perfect harmony with the institutional architecture of the gas markets of the EU and the Soviet Union, based on national vertically integrated monopolies that organized the buying and selling of natural gas. In the case of the Soviet Union, gas trade was organized centrally by Soyuzgazexport, which was attached to the Soviet Ministry of Foreign Trade. In this context, the question of the EU's gas security was predominantly a political one, especially in the eyes of the US, which was concerned that Europe might be excessively dependent on the USSR<sup>4</sup>. Under the aegis of the International Energy Agency, but very informally, the European countries undertook to limit gas imports from the USSR<sup>5</sup>.

Two institutional shocks gradually upset and destabilized the gas relations that had been established between the Soviet Union and the EU.

First, in 1991, the USSR underwent a major shock marked by the disintegration of its centrally planned economy. This represented a radical institutional change in that it involved the elimination of the main coordination mechanisms of the centrally planned economy and its main institutions (coordination through five-year plans, centralized investment financing, organization of production sectors under different ministries)<sup>6</sup>. The reforms

introduced, which were in line with the three key principles of the Washington consensus, namely privatization, competition and greater openness, better known as shock therapy, were intended to lead to the creation of a market economy. These organizational reforms, even though they did not all come to fruition in the gas sector<sup>7</sup>, did give rise to the emergence of a new player, the "joint stock company" Gazprom (Kryokov and Moe, 1996)<sup>8</sup>. Described as a vertically integrated holding (production–transmission–distribution), and with an export monopoly, Gazprom took over the big contracts concluded with the EU. The company thus became the key player in Russia's gas relations with Europe, becoming responsible for increasing the country's gas production to ensure the delivery of volumes contracted with European companies. At the same time, the appearance on the scene of former Soviet republics Ukraine and Belarus as new transit countries could only complicate the relations between Russia and Europe.

Second, gas industry liberalization and the desire to create a single market in the EU (directives of 1998, 2003 and the third energy package) represented a major institutional change for EU member states. Although the new institutions were introduced gradually, the directives resulted in the creation of new organizational models (unbundled model) and new rules, regulatory standards and operating principles for network industries. Generally speaking, the problem concerned the relationship of this new regulatory space with the regulatory bodies of non-EU countries in which the EU directives were not applicable. Europe was thus faced with the challenge of defining a new way of managing its relations with its main gas suppliers. Little by little, its contractual relations with Russia would be destabilized.

Russia in effect has chosen to restructure its gas sector in a way that differs significantly from that advocated by the EU. The Russian gas sector remains dominated by Gazprom, which has a monopoly in transmission and exports. But several notable internal changes should be highlighted. These have profoundly altered the structure of the Russian gas industry for the long term. Huge gas price increases (Henderson, 2011, cf. Table 2) on the domestic market have allowed the development of some form of competition. A two-tier system with a regulated and a non-regulated market has emerged. While most gas supplied to residential consumers is sold at regulated prices (long-term contracts with local distribution companies are possible), the same is no longer true for the industrial sector. A non-regulated market is now developing alongside the regulated market. Industrial consumers (and the electric power sector) who require gas in excess of their consumption quotas can buy additional supplies on a so-called "free" market at non-regulated prices. This market is supplied primarily by independent gas producers, Russian oil companies, and to a minor degree by Gazprom (marginal volumes). There is a certain degree of competition between the big state-controlled companies (Gazprom and Rosneft) and between state companies and private players (national and international), for example between Gazprom and Novatek. From the point of view of the State, it is probably a way to introduce some kind of regulation and control over Gazprom.

<sup>3</sup> The Central Asia–China gas pipeline will enable Turkmenistan to export 40 Gm<sup>3</sup> of natural gas to China. At present, the CNPC has signed a contract for 30 Gm<sup>3</sup> of gas from 2012. (Turkmenistan puts its foot on the gas, *Petroleum Economist*, Oct. 2010, p. 16.

<sup>4</sup> It was in the name of national security that in 1981–1982 the Reagan administration imposed an embargo on the export of pipeline equipment to the Soviet Union. This was equipment the Soviets needed to construct gas pipelines to Europe (Stern, 1987).

<sup>5</sup> No official figures were published but it would appear that unofficially Germany, France and Italy agreed to limit gas imports from the Soviet Union to no more than 30–35% of their total gas supplies (Stern, op. cit.).

<sup>6</sup> In the Soviet energy sector, the notion of the company did not exist. Various ministries such as Oil, Gas, Geology (responsible for exploration), Refining, Commerce (for exploration), took on the functions of companies. They were responsible for allocating investments and the main inputs needed for the

(footnote continued)

economic activity concerned. At the next level down in the administrative hierarchy were production associations dealing with technical aspects of production. The principal coordination mechanism in these hierarchies was the allocation process.

<sup>7</sup> Various gas industry reform projects were drawn up, notably the 2002 project for the vertical de-integration of Gazprom. They were never implemented (Locatelli, 2003).

<sup>8</sup> The joint stock company was created in 1992 in accordance with the Presidential Decree of 5 November.

**Table 2**

Actual average regulated wholesale price in Russia, 2006–2010.

Source: Price rises and market reform in Russia, a long and winding road. *Gas matters*, June 2011.

	2006	2007	2008	2009	2010
<b>Industry</b>					
Rubles	1104	1352	1690	1957	2478
Dollars	40.58	52.81	67.87	64.80	82.60
(%) increase from year before		22.5	25.0	15.8	26.6
<b>Households</b>					
Rubles	863	1031	1291	1294	1903
Dollars	31.72	40.27	51.85	49.47	63.43
% increase from year before		19.4	25.0	15.8	27.3

Initially, and paradoxically, these changes did not bring the question of EU gas supply security to the fore. The EU felt that there were enough aspects of the relationship that were stable or at least in agreement with its own approach based on exporting the *acquis communautaires*. These aspects were, in particular, Russia's desire for a transition to a market economy and its intention to implement its main rules and standards (the rule of law) as well as its organizational models by defining private ownership rights. Other reassuring aspects were its policy to open up its territory to international investors, notably to allow access to its resources, and its adherence to multilateral institutions such as the Energy Charter. But Russia's difficulties in enforcing the rule of law, confirmed by its refusal to sign the Energy Charter Treaty, placed the spotlight on the question of changes in the institutional and organisational aspects of the hydrocarbon industries and relations with foreign countries, and in particular conditions for foreign investors. When Vladimir Putin took over the presidency of Russia in 2000 he established a state-dominated organization model. The aim was to make the rules in Russia clearer and more readily understandable, including by foreign investors, but in fact this new situation was in contradiction with the EU's network industries liberalization reforms that had started to take place at the end of the 1990s. It is in this context that the question of the security of supply of Russian gas became the key issue in the European debate on energy security and the central theme in negotiations<sup>9</sup>. Energy security was thus the main topic at the G8 energy summit in St Petersburg in 2005. In 2006, US senator R. Lugar suggested the creation of an "Energy NATO" (Trenin, 2008).

### 3. Supply security versus demand security: The new duel

The principle of distributing the risks and benefits along the gas chain is the central element in the gas security debate (Clingendael International Energy Programme, 2008). There are two aspects to gas security, namely security of supply and security of demand (Tonjes and De Jong, 2007; Jenny, 2007; Mansson et al., 2012). The terms of the debate have generated considerable literature. On the one hand, it is felt that the supply security of the EU must take into account the "special Russian risk", while on the other, Russia wants to secure its long term investment through its European outlets.

<sup>9</sup> EU–Russia energy dialogue is focussed on three main themes: Strategies, Scenarios and Forecasts; Energy Market Developments; and Energy Efficiency. Subgroups are also working on the themes of Energy Economics, Investments and Infrastructures (Joint Report EU–Russia Energy Dialogue 2000–2010: Opportunities for our future Energy Partnership, EU–Russia Energy dialogue, November 2010 and EU–Russia Energy Dialogue. MEMO/09/121, Brussels, 19 March 2009).

**Table 3**

Gazprom production forecasts, Bcm.

Source: "Gazprom upgrades output forecast". *FSUE Argus*, 11 June 2010; Pétros-tratégies 4 June 2012, p. 7.

	2008	2010	2011	2012	2013	2104
Previous estimates	549	567	570			
Estimates 2009	549	507	510	533		
Estimates 2010	549	519	529	543		
Estimates 2011					549	570
Estimates 2012					541	548

#### 3.1. Security of supply and the "Russian risk" on the EU side

One of the EU's biggest challenges today is to ensure that it has a secure, reasonably priced gas supply for the future. With this in mind, it sees Russia as a particular risk, at least in four respects.

##### 3.1.1. Lack of gas development investment in Russia

The EU considered that Gazprom's investments in the development of new fields was not sufficient to make up for the decline of the three "super giants" Urengoi, Yamburg and Medvezhe, (Milov, 2005; Riley, 2006; Stern, 2006). Doubt was therefore cast on Gazprom's capacity to meet its medium-term contractual commitments in the export market, given the steep rise in domestic demand.

The current economic crisis along with the development of shale gas eases this threat. But with a production surplus that led Gazprom to decrease output by 16% in 2009, the company has re-appraised its production scenarios up to 2014 (Table 3). Development of some new fields such as Shtokman has been delayed (Boussena and Locatelli, 2010). These factors will not be without consequences on the long-term development of Russian gas production.

##### 3.1.2. Changes to Russian legislation

The amendments to hydrocarbons legislation are a second source of uncertainty for the EU. Investments made by European gas companies in energy producing countries and transit countries – with access to hydrocarbon resources being one of the key factors – are emerging as a key element in EU gas supply security (European Commission, 2010a). More stringent conditions of access for international investors to Russia's hydrocarbon resources (cf. Box 1) as well as the doubts cast on the production sharing agreement with Shell for the Sakhalin II project or the involvement of BP-TNK in developing the Kovytko field, have all added to the feeling of uncertainty surrounding Russian gas supplies. Indeed, it is for this reason, and specifically on the question of reciprocity, that the EU intends to limit Gazprom's strategy to invest in the European downstream segment.



**Table 4**  
Conflicting values of EU and Russia.

EU Objective: to ensure security of supply	Russia Objective: to ensure security of demand
<p>Means</p> <ul style="list-style-type: none"> <li>– Access to hydrocarbon resources of producing countries</li> <li>– Competition and single gas market in EU (diversification of supply, spot markets...)</li> </ul> <p>System of governance</p> <ul style="list-style-type: none"> <li>– Competitive system and the Rule of Law</li> <li>– Multilateral investment system</li> <li>– Exporting of <i>acquis communautaires</i></li> <li>– Regulations (3rd energy package) particularly with respect to investment from third countries</li> </ul>	<p>Means</p> <ul style="list-style-type: none"> <li>– Vertical integration on European markets</li> <li>– Long-term TOP contracts</li> </ul> <p>System of governance</p> <ul style="list-style-type: none"> <li>– Asset swapping</li> <li>– Bilateral relations</li> <li>– State-controlled companies with domestic competition but continuation of gas export monopoly</li> <li>– State control over access to hydrocarbon resources</li> </ul>

### 3.1.3. The question of transit security

Transit security is the third factor seen as a threat to EU energy supply<sup>10</sup>. The two gas disputes of 2006 and 2008 between Ukraine and Russia (as well as the dispute with Belarus over oil), brought out into the open the difficulties these countries are experiencing in normalizing their economic relations and bringing to an end the pricing system inherited from the planned economy. Russia's wish to base its gas trading relations with the former Soviet-bloc countries (including its own gas import relations with Turkmenistan) on the price system used in take-or-pay contracts signed with European countries is a key factor to take into account in this debate.

However, the commissioning of the Nord Stream pipeline, with a capacity of 55 Bcm, which could be substantially increased in future years<sup>11</sup>, is undoubtedly a factor in securing Europe's gas supply. There are two reasons for this. First, it does not transit through any other countries, and second, in a context of low growth in EU gas demand, the pipeline could in part compensate for gas supplies normally shipped via Ukraine, in the event of any problems with this country<sup>12</sup>.

### 3.1.4. Risk of Russian market power and the "gas OPEC"

The final important factor that might affect the EU's gas supply security is the possibility of Russia gaining market power, which would enable it to change the structures of the European gas market. This would take the form of a strategy to reduce the volumes on offer (especially on spot markets) in order to push up prices. Gazprom's policy since the mid-1980s to gain footholds in the downstream segments of the European market, in response to the liberalization of the EU gas markets, fits in with its strategy to increase its market power. Strategic vertical integration would enable Gazprom to influence the competition policies promoted in the gas directives. By gaining direct access to end-consumers through acquisition of assets in distribution companies or gas-consuming industries (such as electricity generation companies) Gazprom would have the possibility of developing foreclosure strategies<sup>13</sup> as well as of raising the supply costs of its rivals downstream.

<sup>10</sup> Gas is shipped to Europe via two main pipelines. One passes through Ukraine and has a transmission capacity of 120 Gm<sup>3</sup>, the other transits through Belarus and has a capacity of 45 Gm<sup>3</sup>.

<sup>11</sup> Two additional gas pipelines are currently being considered, resulting in a total transmission capacity of 110 Bcm (EU Energy, 18 May 2012).

<sup>12</sup> Nord Stream Adds To Russia's Gas Supply Options. *Petroleum Intelligence Weekly*, August 29 2011.

<sup>13</sup> The vertical integration of a firm, which can be compared to Gazprom's strategy to acquire assets in the downstream European market, (...) may enable a company to raise downstream rivals' costs and reduce (or even exclude) rivals' access to suppliers (vertical foreclosure) [transl] (Hansen and Percebois, 2010).

### Box 1–Principal changes in the organizational model of the Russian gas industry.

Two main rationales underlie the changes to the gas industry organizational model in the 2000s and 2010s.

- The first confirms Gazprom as the only gas company operating on the international markets. The financial holding company Gazprom is structured around nine main production companies set up in profit centres in which the holding company has a 100% shareholding and a transmission company, Transgaz, in which the holding company also has a 100% shareholding. The State holds a majority stake (51%) in Gazprom. Until the beginning of 2000, the State was a dominant shareholder with 38.4% of the shares. International investors could only gain access to Gazprom's capital via ADRs, or American Deposit Receipts, quoted on foreign markets at rates very much higher than those applied in Russian financial institutions. Now the market for Gazprom's shares is unified and free.
- But along with these developments, a private sector continues to operate, and even grow. Independent gas companies and national oil companies today account for 20% of gas output, and this proportion is set to increase considerably in the years to come

A dual market is thus becoming established. On the one hand there is the "administered market" in which gas is sold essentially by Gazprom at administered prices and in the form of quotas. The company decides annually how much gas it will allocate to each category of consumers. On the other hand a "free market" or deregulated sector is developing where each company (including in the electricity sector) can obtain additional volumes of gas over and above its established quotas at freely negotiated prices (10 to 20% higher than regulated prices). This market is for the most part supplied by independent gas producers and national oil companies, with Gazprom supplying marginal amounts. In 2009, Gazprom sold 12.9 Bcm under this arrangement<sup>32</sup>. The gas exchange operated by Mezhrregiongaz was created in 2007–2008.

<sup>32</sup> "Russia starts to reform its internal gas market", *Gas Matters*, October 2007, p. 13–17.

Russia is a member of The Gas Exporting Countries Forum (set up in Tehran in 2001). The dominant position of Forum members in terms of gas reserves and production raises the question of its

market power. More generally, the possibility of the Forum evolving into a gas cartel similar to OPEC for oil has rapidly become a talking point. But the gas market structures themselves, and especially the EU market, are a major barrier to any possible transformation of the Forum into a cartel (Darbouche, 2007; Finon, 2007; Hallouche, 2006). A large proportion of gas is sold under long-term contracts. So, it would seem difficult to introduce coordinated strategies to limit production as a way of bolstering prices, such as OPEC is able to do through its quota policy. Concerning Gazprom itself, despite certain adjustments to the price index formula, the company seems to want to prioritise revenue (and therefore prices) over volumes and market share, which could constitute a significant break from the past. In this respect, Russia has aligned itself with the traditional Algerian position in its price oriented approach.

Nevertheless, the “downstream integration strategy” remains very limited, both in terms of the countries concerned and the sectors, and is undoubtedly not sufficiently developed to have any real impact on the structures of the European gas market<sup>14</sup>. What is more, this policy has only come to fruition in a certain number of countries, namely the UK, Italy, Hungary, Austria and in particular the Baltic countries. Finally, spot markets, which are a necessary condition for any producers who wish to exercise real market power, are not sufficiently developed in Europe. It should also be remembered that spot market transactions are not given priority in Gazprom’s strategy. Depending on prices, from time to time the company may use spot markets to sell its gas, but it intends to give priority to long-term contracts to organize gas sales to Europe. The scenario of a gas OPEC is hardly compatible with this kind of approach favoured by Russia.

Similarly, the multiplication of transmission networks (Yamal–Europe, Blue Stream, Nord Stream, South Stream) and storage infrastructure, along with ownership rights in certain transmission networks<sup>15</sup>, is seen as being part of Gazprom’s strategy to manipulate the European gas market. In theory, such a strategy would provide Gazprom with flexibility and opportunities to “allocate” the volumes (depending on prices) between the different regional markets in the EU, or even between Europe and Asia in the context of the big gas projects in Eastern Siberia (Boon von Ochssée, 2010).

### 3.2. Demand security: “The EU risk” for Russia

The EU’s climate policy along with its gas market liberalization policy can create risks for its suppliers. These policies can indeed create uncertainties regarding future natural gas demand and thus represent a risk for producers. From Russia’s point of view, the EU is attempting to unilaterally impose its conditions and preferences without taking into account the interests of incumbent natural gas suppliers.

#### 3.2.1. The uncertainties linked to the UE climate policy

Before the Fukushima accident, the climate and energy policies of the EU – which were focussed principally on energy efficiency and increasing the proportion of renewables in the energy mix – could have led to a reduced demand for natural gas, which would have affected the volumes imported. According to different energy and climate policy hypotheses, there are considerable differences in the gas consumption scenarios for 2030. For example, the difference between the two extreme scenarios represents over 70% of current gas imports in the region. The publication by the DG Climate Action of a roadmap for moving to a competitive low carbon economy by

2050 is bound to rekindle the debate. In 2050, gas and oil imports into the EU could be reduced by 50% compared with current figures (European Commission, 2011). Such uncertainties over a relatively short period of time can raise doubts and upset the long-term investment plans of suppliers outside the EU. The decision made by some countries to abandon nuclear power following the Fukushima accident could however change these projections.

For Russia, these uncertainties are combined with those related to the strategy of the EU to diversify its supply sources with the aim of securing supply and creating more competition among its suppliers. The Nabucco project, considered by the EU to be in the interests of Europe and therefore benefiting from a certain number of advantages, is the materialization of a policy aimed at shipping gas from the Caspian, Central Asia and the Middle East via the southern corridor (European Commission, 2010b)<sup>16</sup>. It is proving to be in direct competition with Russia on the European market. Russia is therefore seeking the same advantages for the South Stream project, in which Gazprom and ENI are the main shareholders.

#### 3.2.2. Uncertainties relating to changes in TOP contracts

One persistent source of friction between the EU and Gazprom (and probably other suppliers) concerns possible re-examination of long-term take-or-pay contracts or changes to certain clauses that are felt to be incompatible the EU liberalisation process. The Gazprom antitrust case initiated by DG Competition (September 2012) is an illustration of the problem (Riley, 2012)<sup>17</sup>.

According to the theory of transaction costs and incomplete contracts, long term contracts are justified by the specific nature of the assets involved, in particular regarding transport. This characteristic is likely to encourage hold-up strategies given the opportunistic behaviour of players (Williamson, 1985). These contracts also eliminate other forms of externality, such as double marginalization and free-riding problems (Talus, 2007). The idea behind TOP gas contracts is that with their price indexation clauses, flexibility clauses, clauses on minimum take-off volumes, and so on, they enable risks related to price and volume to be shared between producer and consumer along the entire gas chain (Hubbard, Weiner, 1986; Boussena, 1999). In this respect, TOP contracts increase security for both the importer and the exporter. For the producer if demand from their customers is no longer guaranteed in the long term by contracts, and they must compete on spot markets, the volume risk (and the uncertainty) will be increased. The company must make huge investments – which carry inherent risks – and therefore needs to have guaranteed outlets on the European markets<sup>18</sup>. It has repeatedly made it clear that it cannot develop the Yamal province (except some fields<sup>19</sup>) unless it has guarantees from European countries in the form of long-term take-or-pay contracts.

Long-term contracts are being questioned in the name of the free-market principles advocated by the EU (Glachant and de Hauteclouque, 2009; Talus, 2011). According to the EU authorities such contracts constitute a barrier to the entry of new potential players and hold back the development of sufficient market liquidity (Percebois, 2008).

Today, however, it is undoubtedly in relation to possible changes to the price indexation formula in TOP contracts that the most serious controversy has arisen between the Russian

<sup>16</sup> In particular, it benefits from partial exemption from third party access rules. Furthermore, projects of “European interest” can benefit from an improved permitting procedure and concentrated funding (European Commission, 2010a)

<sup>17</sup> Three suspected anti-competitive practices in Central and Eastern Europe are mentioned: “(...) Gazprom may have divided gas markets (...). Gazprom may have prevented the diversification of supply gas (...). Gazprom may have imposed unfair prices”. Energy Economist, 372, October 2012.

<sup>18</sup> Low domestic gas prices are currently not sufficient to provide a return on the investments needed to develop the gas province.

<sup>19</sup> Bovanenok has been put in production in October 2012.

<sup>14</sup> Gazprom has set itself the goal of directly holding 10% of the French and UK markets by 2010 and 20% by 2015.

<sup>15</sup> For example, Gazprom has a 10% share in the interconnector between Belgium and the UK and a 9% option in the interconnector between the Netherlands and the UK. Through Wingas, it also owns some networks in Germany. Finally, the company is attempting to increase its storage capacity in Europe.

producer and the European gas companies. There are two parallel pricing systems in operation in the EU. One system is based on long-term contracts and uses a price indexation formula while the other is based on spot prices. Whereas prices in TOP contracts have generally followed the evolution of the price of crude or refined products, to which they are indexed, natural gas and LNG spot prices have collapsed because of oversupply on these markets. Consequently spot prices and prices in long-term contracts have been effectively de-linked<sup>20</sup>. This has intensified debate concerning the relevance of indexing gas prices in long-term contracts solely to those of oil (Stern, 2009; Stern & Rogers, 2011; Konoplianiuk, 2010). The possibility of introducing spot prices into this indexation formula is at the heart of negotiations between Gazprom and some of its European customers. For certain customers (namely EON-RuhrGas, GDF-Suez, WINGAS, the Slovakian SPP), the producer has supposedly agreed, for a given volume (and a given period of time), to take into account the price of natural gas on spot markets, but without changing the structure of the formula<sup>21</sup>. Available information on these changes remains very fragmented, while Gazprom continues to state its strong opposition to significant changes to the indexation formula itself. According to the company, negotiations cannot concern prices only. Possible changes to delivery obligations must also be considered (Komlev, 2012).

In fact, despite certain adjustments in the price, the company seems to want to prioritise revenue (and therefore prices) over volumes and market share, which could constitute a significant break from the past. Russia's internal economic constraints have probably had some bearing on this development. From this point of view, the company seems to be using the prices obtained in TOP contracts drawn up with its European customers as a reference point, particularly in its negotiations with China concerning the future exportation of natural gas (Gas Matters, October 2011).

### 3.2.3. Gazprom and the "Third country clause"

In an increasingly competitive environment, one of Gazprom's major challenges is to preserve its market share. Gazprom intends to meet this challenge mainly through a strategy of downstream integration in the European market through the acquisition of shares in distribution and transmission companies or gas-consuming industries (Locatelli, 2008). According to Gazprom and the Russian government<sup>22</sup>, some of the rules of the third energy Package could severely limit its investments in Europe, directly calling into question its industrial strategy. Today, conflict between the two parties is focused on the implications of the "third country clause". This clause, sometimes called the "anti-Gazprom clause", opens the way for discriminatory treatment as far as foreign investments are concerned. The introduction of ownership unbundling at the European level<sup>23</sup> together with the third country clause means an end to Gazprom's adaptation strategy through downstream integration. The rules adopted in the third energy package, even though they are less ambitious

than the EC's initial proposals, mean that a producer and supplier such as Russia cannot, at the same time, be a Transmission System Operator (TSO) in a member state (Willems et al., 2010). The renegotiation of the gas transit contract between Poland and Russia already provides an idea of the implications of such a rule. The Polish stretch of the Yamal pipeline, previously managed by EurRoPol Gaz, a joint venture between Polish PGNiG and Gazprom, will in the future be managed by the Polish operator Gaz-System<sup>24</sup>.

### 3.2.4. Question of dual prices

In addition to these problems is the more specific question of dual pricing. Dual pricing refers to differences in prices for the same goods sold on the domestic market and the export market. In Russia's case, this particularly concerns natural gas, which is sold at a much lower price to domestic consumers than on the export market. Under certain provisions of the Energy Charter (especially those concerning trade and commerce), this pricing system could be perceived as a way of granting hidden subsidies, which would be contrary to the principles of the Charter (Haghighi, 2007). Given the considerable economic as well as social and political stakes, Russia intends to increase its domestic tariffs only gradually. Tarr and Thomson (2003) have shown that in view of the quasi-monopolistic structure of the Russian gas industry, the reference price on the home market must be the long-run marginal cost price and not the export price. Aligning domestic prices with export prices would lead to a big fall in industrial output and would therefore come at a heavy cost (Tarr and Thomson, 2003). In view of these factors, it is easier to understand why Russia has not yet ratified the Energy Charter Treaty. There have been some changes in the Russian gas market. It is still characterised by low prices and cross subsidies and an energy price structure in which natural gas prices remain lower than coal prices (Konoplianiuk, 2010). But, regulated gas prices have increased a lot, even if they remain lower than the European gas prices (Hendersen, 2011, cf. Table 2).

## 4. Could the two different approaches to the gas industry become complementary?

Quite apart from the economic stakes, gas trade relations between the EU and Russia are shaped by two different conflicts of interest and values around the question of energy security (Table 4). Each party must deal with the relatively contradictory ideas as to how markets and gas industries should be structured. The notions of reciprocity that could be at the heart of relations between the EU and Russia are the products of differing institutional environments and reflect extremely contrasting views about what is meant by reciprocity for each side.

The analysis of these differences leads to select a framework which takes into account the national institutional environment in order to analyse the structure of governance and the possible reforms (Brousseau and Glachant, 2002). The theoretical grounds of this approach encompasses two concepts: the institutional coherence and the institutional complementarity. The institutional complementarity implies that the performance of an institution is conditioned by the presence of another institution (Höpner, 2005). The institutional coherence reflects the structural characteristics of institutions. Different institutions can be structured in a coherent way or not (Höpner, 2005).

<sup>20</sup> Between August 2008 and November 2009, spot prices were on average 50% lower than TOP contract gas prices indexed to crude and petroleum product prices in Europe and Asia.

<sup>21</sup> Whatever the case, this is what Pétrostratégies claims. But information remains very fragmented on this subject, with confusion over the volume of Gazprom sales in 2011 and over the price reduction applied in Europe. *Pétrostratégies*, 23 January 2012.

<sup>22</sup> These questions in particular were discussed at the meeting between V. Putin and E. Barroso on 24 February 2011 (*Putin to seek 2050 gas 'roadmap' on Brussels visit*, EurActiv, February 2011).

<sup>23</sup> Unbundling involves separating the various segments of the gas chain in terms of their legal structure and for accounting purposes in order to avoid vertical integration, which is considered to be a barrier to new entrants.

<sup>24</sup> This operator has also agreed to allow third party access to the pipeline to use spare capacity (Poland and Russia reach compromise deal with EU on long-term gas supply and transit. *Gas Matters*, Dec./Jan. 2011).



#### 4.1. Access to Russian hydrocarbon resources, a strategic objective in the EU's policy to ensure security of supplies

The EU's intention is to manage its relations with its gas suppliers principally by exporting its *acquis communautaires* on matters of energy regulation (Mc Gowan, 2007). Its aim, insofar as this is possible, is to establish a single regulatory space (standards, rules, etc.) (Belyi, 2009). This approach, essentially based on the Energy Charter Treaty, provides the basis for its negotiations to develop a new energy partnership with Russia (European Commission, 2010b). This partnership, even though its objectives are less ambitious<sup>25</sup>, can be seen as a first stage of the policy to export the *acquis communautaires* of the EU. Based on principles of competition, it in fact presupposes organization models that reflect those defined by the different European gas and electricity directives.

Exporting the *acquis communautaires* to the producing countries would in fact enable the EU to ensure the security of its gas supply by giving its gas companies the possibility of obtaining access to the hydrocarbon resources of producers. The Energy Charter, a multilateral investment treaty, guarantees investments in the upstream oil and gas sectors for international oil companies (Wälde, 2008). The principle of state sovereignty over natural resources is not compromised by the Charter, but the Treaty establishes a series of rules regarding trade, transit and investments, the aim of which is to liberalize investments and energy flows (incorporation of certain clauses of the World Trade Organisation such as the most-favoured-nation clause and the national treatment clause, Haghighi, op. cit.). These rules provide guarantees for international investments and impose a principle of non-discrimination.

Extension of the *acquis communautaires* by means of the transit protocol of the Energy Charter Treaty<sup>26</sup> would also help improve supply security for the EU by promoting competition. This protocol could provide a legal framework for opening up Gazprom's gas pipeline network to foreign suppliers. If Gazprom followed the basic principle of "freedom of transit" by allowing third party access to its transmission networks<sup>27</sup>, it would give gas companies the opportunity to ship gas from Central Asia to Europe and in doing so would increase the number of suppliers on the European market<sup>28</sup>.

#### 4.2. Access to EU downstream markets: Strategic objective of Russia

The policy of liberalization and unbundling of network industries – combined with competitive terms of access to hydrocarbon

resources determined by the principles of the Charter – is a policy that has proved in many respects, in the Russian institutional context, to be incompatible with the state-defined objectives. Since the arrival of V. Putin, growth and modernization of the Russian economy have emerged as major objectives and vital conditions for the re-emergence of Russia on the international stage as a great modern power (Tsygankov, 2005). Given Russia's wealth of resources, hydrocarbons are a vital part of the country's strategy. This sector is used as an instrument for reaching the objectives of growth and modernization of the Russian economy. In such conditions, how resources are managed and the rate at which they are extracted (depletion policy), as well as prices on international markets, are key factors in Russia's energy policy. In the first instance, these resources can help the country meet the short-term challenges of balancing its budget, while in the long term they will provide revenue for financing the modernization of the economy.

To meet these objectives, the Russian state must define new organization models for its hydrocarbons industries. From the angle of institutional complementarity (North, 2005), it can be considered that the aim of the strategies adopted by Russia to reorganize the hydrocarbons sector is to define a model that is consistent with the country's institutional environment. This environment is characterized by the ineffectiveness of certain market institutions—the fiscal regime, contractual arrangements, property rights, and so on (Rossiaud and Locatelli, 2009). Two approaches can be identified here. The first concerns the growing role of the state in the hydrocarbons sector while the second concerns the stricter control by federal authorities over conditions of access to resources for national and international players (Fortescue, 2010). State-controlled companies can serve as a remedy/substitute for the shortcomings of the market institutional arrangements in a rent sector, taking into account the particular institutional context. In fact, if the state has direct control of the country's national hydrocarbon companies it has the possibility of using hierarchical coordination in order to impose its preferences in matters concerning exploration and depletion rates (Locatelli and Rossiaud, 2011).

The approach to oil and gas company internationalization implemented by the authorities, as envisaged by the Russian state, is based on an industrial strategy that clearly does not fit into the framework of the unbundled organization model of network industries or the multilateralism developed in the Energy Charter Treaty. For example, Gazprom's internationalization strategy on the European market is based first and foremost on vertical integration in the downstream segment. As mentioned earlier, this approach conflicts with the model of vertically de-integrated (unbundled) network industries. Second, the company's strategy is also based on asset swapping. Russia's general strategy is to exchange access to its hydrocarbon resources for assets in the downstream gas sector in importing countries or in international oil companies. This kind of arrangement implies bilateral relations with gas or oil companies with the support or even involvement of the states. Such a policy of reciprocity (Belyi, op. cit.), implemented by Russia and certain European states (Germany, Italy, France, even the UK), is in total contradiction with the multilateralism promoted by the EU. In addition to the UE–Russia dialogue, economic partnerships concluded with certain European countries have provided a basis for energy cooperation (Zhiznin, 2007) between Gazprom and certain major Western European firms, such as ENI, RWE, E.ON and Gdf-Suez. These examples bear witness to the difficulties experienced by the EU in drawing up a common gas policy, notably where trade with Russia is concerned.

In this context, implementing the rules and standards promoted by the Energy Charter Treaty would jeopardise Russia's

<sup>25</sup> The level of liberalization of the *acquis communautaires* has in fact increased progressively since the publication of the first electricity directive (1996) and gas directive (1998). The two legal frameworks, that of the gas directive and that of the Charter, were introduced at the same time (1998), thus reflecting their similar principles with respect to liberalization. Since then, new directives have been introduced in the EU and differences regarding liberalization between the two legal frameworks have multiplied. One question that might be asked is whether the EU is still putting its faith in the Energy Charter as a means of exporting the *acquis communautaires* and as a legal basis for a Russia–EU common energy space, or if it might prefer another instrument such as the Energy Community Treaty. A summary of this debate can be found in Konoplyanik, (op. cit.).

<sup>26</sup> The Energy Charter transit protocol (2000) specifies the conditions of access to pipelines. It defines principles for determining transit tariffs, available capacity and unauthorized taking during transit.

<sup>27</sup> However, the protocol does not contain rules regarding TPA. Other disagreements on transit between the EU and Russia concern in particular the principles of transit tariff determination, use of available transit capacity and the "Right of first refusal" (where the duration of the supply contract is longer than the duration of the transit contract). For further details cf. Haghighi (op. cit.).

<sup>28</sup> With their significant reserves, Kazakhstan and Turkmenistan could become major gas suppliers for the EU, but a solution needs to be found to the problem of infrastructure to ship supplies from this landlocked region. Third party access to the Russian gas pipeline network would be one of the least costly solutions.



attempts to reconcile its hydrocarbons organizational model with its institutional environment. The government is trying to find an alternative to the Charter and to the principles that it believes are favourable to importing countries while being detrimental to exporting countries (Van Agt, 2009). More generally, Russia's refusal to ratify the Treaty<sup>29</sup> is a way of contesting the normative power of the EU (Gomart, 2010). Clearly Russia's aim today is to distance itself from the EU institutional model.

Following various declarations from president A. Medvedev and his prime minister V. Putin, Russia published a document entitled "Conceptual Approach to the New Legal Framework for Energy Cooperation"<sup>30</sup>. Although the status of this document is far from clear, it does set forth a certain number of principles that supposedly provide a framework for defining a new legal basis (and new standards) for dialogue between Russia and the EU. It reiterates a few of the elements that structure current energy policy in Russia, in particular unconditional state sovereignty over natural resources, exchange of assets, the need to take into account demand aspects and not just questions of supply security, and finally the challenge of redefining relations between transit countries and producing countries. For the most part, the principles outlined are not in contradiction with international law (Nappert, 2009). But it remains to be seen what effect they will have and how they could be implemented through standards and rules<sup>31</sup>.

## 5. Conclusion

The problems of defining new gas trading relations between the EU and Russia stem primarily from a clash of values and from Russia's rejection of the EU's power to enact rules regarding the organization of gas industries and markets. The model of vertically unbundled network industries promoted by the EU is no longer the one that Russia intends to implement in its gas sector, despite the big changes taking place in its domestic market. But the difficulties being experienced also reflect the inability of the EU to define a common policy with respect to Russia. It is thus understandable why relations between the two regions are increasingly organized on a bilateral basis between gas companies and member states rather than on a collective basis. All this is happening in a context where the economic stakes are very high. For the EU and its gas companies, access to Russia's hydrocarbon resources is a key question. For Gazprom, the question is whether or not it can define strategies that are flexible enough to adapt to the changing conditions in the European gas market. This is a fundamental issue for Gazprom as the company faces up to the challenges of a more competitive market not only in the EU but also at home, with the rise of independent gas firms such as Novatek.

The organizational changes that will be put to the test in the EU gas market must take into account these institutional differences if they are to provide a satisfactory response to supply security concerns. It is clear therefore that the rules of the third energy package, which are at the heart of the current controversy (De Jong et al., 2012), should be re-examined with suppliers. From this point of view, the reciprocity of upstream and downstream investments must be at the core of the analysis, as demonstrated

by recent agreements reached in both the gas sector (E.ON-Gazprom) and the oil sector (Rosneft-ExxonMobil, for example). It is without question one of the "patterns of trade" that could result in win-win solutions for the EU and Russia.

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<sup>29</sup> On 20 August 2010, Russia officially declared that it did not intend to ratify the Treaty.

<sup>30</sup> This document can be consulted on the Kremlin's official site: <http://eng.kremlin.ru/text/docs/2009/04/215305.shtml>.

<sup>31</sup> These proposals for a "new" energy charter are not sufficiently developed at the moment to be seen as a credible alternative to the Energy Charter Treaty (Nappert, 2010).

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