

Russian gas price reform and the EU–Russia gas relationship: Incentives, consequences and European security of supply

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Abstract

In order to provide a comprehensive picture on the relationship between Russia and the EU, the focus should be on both the external energy relationship as well as Russia's internal organization. This paper sets out to do this by combining both strands of research in order to arrive at recommendations for Europe on the way to adjust its energy policy towards Russia. The emphasis is on whether or not Russia should impose unified gas pricing. Main conclusions are that the perceived advantages of unified Russian gas pricing to Russia as well as Europe are in fact overstated and that EU security of supply might worsen under unified gas prices. Three policy recommendations are that EU policy should (1) more explicitly acknowledge the interdependence between Russia and Europe; (2) not push Russia towards unified gas pricing; and (3) not take for granted any increase in Russian exports flowing to Europe.

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1. Introduction

There has been renewed interest in the issue of European gas import dependence following the gas struggle between Russia and Ukraine (and to a lesser extent Moldova) during the last week of 2005 and the beginning of 2006. At New Year's Day, following a disagreement concerning subsidized gas prices paid by Ukraine for Russian gas, Gazprom decided to reduce gas supply to this country. The Ukrainian pipeline system, however, is pivotal in supplying gas to Europe and consequences for Europe's gas supply security were quick to follow: from January 1–3, Gazprom's gas supply to France decreased by 25–30%; supply to Austria decreased by 33%; and Italy received approximately 25% less gas than normal (Stern, 2006a). These developments have increased the awareness of the risk being too dependent on a single supplier. Moreover, anxieties are magnified by fears of the gas row being politically motivated and, therefore, that Russia's energy

weapon could be deployed against Europe too (Washington Post, 2006; The Guardian, 2006). These problems, among others, have resulted in a growing body of research on the EU–Russia gas relationship. One strand focuses on the interdependence between the two of them and concludes that the current EU–Russia relationship should be amended (Ivanov, 2003; Monaghan and Montanaro-Jankovski, 2006; CEC, 2006). The fact that the EU and Russia are to some extent interdependent has been well established in the literature. When we consider the European reactions to the gas struggle, however, this understanding does not appear to be established equivalently in policy circles. Section 2 will discuss this issue by introducing the concept of security of supply and will claim that the interdependence is in practice too often overlooked. However, in order to provide a comprehensive picture, Russia's internal policy should be reckoned with also. This is because an important reason for Russia's dependence on Europe is its dual gas-pricing policy in which low revenues from internal gas supplies are subsidized by much higher European gas prices. This brings us to a second strand of research that focuses on

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Russia's domestic gas policy (IEA, 2002; Ahrend and Tompson, 2004, 2005; OECD, 2004; Stern, 2005). We will confine ourselves to Russia's gas-pricing policy (Selivanova, 2004, Tarr and Thomson, 2004; Dudek et al., 2006). Dual gas pricing provided a natural gas subsidy to the Russian economy. In Russia's WTO accession negotiations, some WTO members, among them Europe, argued that dual pricing acted as a trade barrier by providing unfair advantages to Russian energy-intensive companies and, therefore, that gas prices should be unified. Section 3 discusses Russia's dual gas-pricing policy and elaborates on the implications for domestic Russian gas prices of unified gas pricing. By combining both strands of research mentioned above, this paper sets out to provide recommendations for Europe on the way in which to adapt its relationship with Russia. To this end, Section 4 analyses whether Russia's incentives point in the direction of unified gas pricing; Section 5 analyzes the European case. Neither one will have sufficient incentives to want to introduce unified Russian gas pricing. From a EU perspective, unified gas pricing could in fact even be disadvantageous as it might worsen Europe's security of supply. Section 6 concludes by providing a number of policy recommendations to EU policy makers.

2. Security of supply

Security of supply can broadly be divided into two parts: system security—the extent to which consumers can be guaranteed, within foreseeable circumstances, of gas supply—and quantity security—guaranteeing an adequate supply of gas now as well as in the future. This comprises not only gas volumes, but also price and diversification of gas supplies. The emphasis in this paper is on quantity security, particularly Europe's dependence on Russian gas. This import dependence creates three risks: source dependence, transit dependence, and facility dependence (Stern, 2002). The gas struggle between Russia and Ukraine and European responses to it indicate an emphasis on source and transit dependence (Chichester, 2006). This paper will take the same focus. We start with transit dependence. Because most pipeline gas transits several countries before reaching its destination, transit issues are very important with respect to European gas supply. Russian exports account for 38% of EU imports and 26%¹ of EU consumption. These Russian gas supplies to Europe transit at least one country with Ukraine being by far the most important with around 80% of Russian gas supply to Europe transiting Ukraine in 2004 (Stern, 2005). Interruption of Ukrainian transit flows would, therefore, seriously harm Europe. Transit risks also pertain to Russia. The relationship between Russia and Ukraine illustrates Rus-

sia's interests in this regard. Both Russia and Ukraine could interrupt Russian gas transiting Ukraine.

If Russia decreases its gas flow to Ukraine and consequently hurts those European customers who depend on Ukrainian transit, Russia's reputation as a reliable supplier will be damaged. Though Russia will possess a considerable amount of market power in the future, a damaged reputation will nevertheless be harmful to them since it urges Europe to focus on alternatives such as nuclear energy or LNG at an increasing speed. This is illustrated by reactions from Brussels regarding the gas struggle emphasizing the need for a more coordinated and cohesive European policy on security of supply measures and for Europe to become less dependent on Russian gas by focusing on alternative suppliers (Piebalgs, 2006). Also, from a longer-term perspective, a damaged reputation could have similarly negative consequences to Russia's relationship with other demand centres such as China, India or the USA (see Section 5).

If, on the other hand, a decreased gas flow to Europe would be attributable to the Ukrainians, the ultimate consequences would not change much. After all, the security of Russian gas flows to Europe would still be damaged resulting in similar reactions from Europe—and the other demand centres—as mentioned above. The risk of transit-induced interruptions has been acknowledged by Russia: a main reason for constructing the Blue Stream Pipeline to Turkey, the Baltic Pipeline through the Baltic Sea to Germany, and the Yamal-Europe Pipeline through Belarus to Poland has been to minimize transit risks by circumventing potentially difficult transit states. Minimizing transit risks is thus an importance policy objective for both Europe and Russia; as a result, emphasizing only Europe's costs of unreliable transit is a much too narrow view on the subject.

It is accepted in academic circles that source dependence creates a degree of interdependence between Russia and Europe (Ivanov, 2003). However, in spite of the fact that the launch of the EU–Russia Energy Dialogue actually acknowledges Russia and Europe being interdependent (EU–Russia Energy Dialogue, 2006), in practice this observation is still too often underrated or overlooked. The above-mentioned European reactions to the gas struggle, emphasizing that Europe should not depend too much on Russian gas since Russia may abuse its dominant position, illustrate this. Russia's interest in supplying Europe has hardly ever been mentioned. Although Russia has been a reliable supplier thus far, from a user's political viewpoint, some uneasiness with large import dependence is in fact understandable. However, it should not be forgotten what the alternative is: diversification of supplies to another major gas supplier such as Qatar, Algeria or Iran, does not necessarily decrease fears of a producer state using energy as a political weapon. Second and more important, if we consider that Russia is also to some extent dependent on Europe, some of the uneasiness regarding source dependence should vanish. A main reason for

¹These import dependence figures should be treated with caution. Given the large differences between member states, figures like these have very limited value concerning the dependence of a specific member state.

Russia's dependence is its dual gas-pricing policy, which makes Gazprom and Russia to a significant extent dependent on revenues earned from exports to Europe. The following section will elaborate on this.

3. Russian gas prices

Exports to Europe provide Gazprom with cash money (which was not very often the case with domestic sales, as we will see below). A more important aspect is the price that Gazprom receives for its gas. Russia has a dual gas-pricing policy in which low revenues from domestic gas prices are subsidized by much higher European—and to a lesser extent Commonwealth of Independent States (CIS)—gas prices.

In order to identify the incentives that both Russia and Europe have with respect to Russian energy prices, we should first discuss the basics of Russia's dual gas-pricing system (IEA, 2002; Tarr and Thomson, 2004; Ahrend and Tompson, 2005). Federal authorities have substantial legal power over the natural gas sector in order to improve the social and economic environment. The government determines the main principles of natural gas pricing by stating that natural gas prices should be indexed to their pre-reform—i.e., pre-1990—levels. Prices are regulated by the Federal Energy Commission (which in March 2004 became the Federal Tariff Service [FTS]). These pre-reform price levels, in turn, reflect the fact that since 1970 the Russian government has promoted the use of natural gas in Russia's economy. One of the main elements of this gasification policy has been to keep domestic prices at a very low level to stimulate gas use. Another element of the gasification policy was the stimulation of huge investments in building thousands of kilometers of pipeline in order to supply gas to cities, villages, and industries.

The main reason for dual gas pricing has been to provide a gas subsidy to the Russian economy. During the 1990s, it had been common for the state budget or the central bank in Russia to offer some kind of subsidy to large industrial enterprises (Ahrend and Tompson, 2004). This role of subsidy provider was gradually taken over by the energy monopolists—RAO UES for electricity and RAO² Gazprom for gas—through payment arrears, barter and money surrogates (Ahrend and Tompson, 2004). Since they were not allowed to bankrupt non-payers and were generally unable to cut off supplies, Gazprom and UES had to resort to bartered goods and money surrogates to receive whatever payment they could. Both non-payment and the fact that the bartered goods and money surrogates were generally of lesser value than the gas they substituted for, resulted in losses for Gazprom on the domestic market. This situation can be considered a subsidy to domestic gas users. In addition, subsidies took monetary form also, since domestic gas was significantly cheaper than exports. This

was a measure to promote growth in predominantly the manufacturing branches of industry. Lower gas prices lowered operating costs for gas intensive industries; they also lowered operating costs for the electricity generation sector, because gas is an important factor in electricity generation. These advantages could subsequently be passed on to other industries. Gazprom's export supplies were priced much higher and helped to finance these subsidies. Within this system, three main classes of sales can be identified: domestic sales are priced very low; sales to countries from the CIS are priced higher; and sales to Europe are priced the highest.³ In 2003, 65% of Gazprom's revenues were from European sales, and European prices were six times those of domestic consumers (Stern, 2005). More recent figures suggest a ratio of five to one (Götz, 2006a). Russia thus has significant financial incentives in supplying Europe; Europe is regarded by Gazprom as a premium market for obvious reasons. This situation makes Russia dependent on supplying Europe and significantly lowers Russia's incentives to cut off supplies to Europe. As long as this is being neglected, security of supply fears will be overstated.

Even though the environment has not been one of the goals underlying the introduction of dual gas pricing, the gasification policy in fact greatly improved the environment (Dudek et al., 2006). Russia has historically been very well endowed with both coal and oil. This led to many Russian regions burning predominantly oil and coal for their energy purposes, resulting in high levels of air pollution. The gasification has been brought about by determining the price of gas at a lower level than that of coal and oil. Moving to natural gas—of which Russia is also very well endowed—significantly lowered pollution levels.

Europe's initial stance has been that Russian industrial prices had to be raised to eliminate any unfair advantage of Russian energy intensive companies over their European counterparts (Stern, 2005). Later on, this demand was toned down with domestic prices needing to cover at least production costs. In Russia's WTO accession negotiations, however, some WTO members still demanded unified gas prices (Selivanova, 2004).

In order to prevent the discussion from being blurred, the definition of unified gas pricing deserves attention. Pricing at European level does not mean that Russian domestic users should pay the same as Europeans for their gas. Unified gas pricing refers to equalizing Russian domestic prices to European export netback prices—that is, export prices adjusted for transport costs, taxes, and import duties (I will in the following omit the prefix netback). Note that any increase in domestic prices will apply to regulated industrial prices only residential prices are for the time being left untouched.

²RAO stands for Russian Joint Stock Company. This prefix lasted until the 1998 creation of the open joint stock company Gazprom (OAO).

³These are the main classes. Within the domestic class residential gas prices are lower than industrial gas prices. Gas prices between CIS countries also tend to differ considerably.

Before discussing the incentives towards unified prices, we should realize that European prices are not—yet—market prices determined by supply and demand, but are in fact linked to oil prices, which are significantly influenced by OPEC. The linkage has made it significantly harder nowadays for Russia to equal European gas prices. After all, oil—and therefore gas—prices have risen to record-high levels. The low oil prices at the end of the last millennium would have made unified prices not very difficult to achieve.

Russia appears to be willing to raise its domestic prices. According to the “Energy Strategy of Russia for up to 2020” (Ministry of Energy, 2003)⁴ the plan is to double 2002 prices by 2006 and triple them by 2010. This implies that industrial tariffs are planned to rise from the 2003 level of \$23 per 1000 cubic meters (Kcm) to \$40–41/Kcm in 2006 and \$59–64 in 2010 (Ivanov, 2003). The figures agreed in the EU–Russia WTO negotiations are, surprisingly to some extent, lower than those envisaged in the Energy Strategy: \$37–42 in 2006 and \$49–57 in 2010 (Stern, 2005). The difference is that the WTO prices are binding on Russia to some extent, whereas the prices from the Energy Strategy are not. The WTO negotiations spurred discussions about whether Russian domestic prices should be raised, and if so, what level. The current average that would have resulted from unified gas pricing is approximately \$ 100/Kcm (Kernohan and Vinokurov, 2005), indicating that the above figures do not suffice to introduce unified pricing. The question remains whether the above projections are reasonable or that unified prices are the desirable benchmark. The next two sections answer this question.

4. Russia's incentives towards unified gas pricing

We will in this section analyze whether the relevant stakeholders in Russia's natural gas market have sufficient incentives to introduce unified pricing. These stakeholders are: the Russian enterprises consisting of near-monopolist Gazprom, the independent gas companies and energy-intensive industrial gas users, and the government—the federal government and the Russian provinces. We will see that Russia will probably not in itself aim for unified gas pricing.

4.1. Russian enterprises

Gazprom is the world's largest gas company. It dominates the Russian gas market with 86% of gas production, 87% of domestic gas deliveries and complete control over exports (Stern, 2005). Gazprom is also a central actor in Russia's dual gas-pricing policy. The domestic gas market is rationed by the government, with Gazprom in charge of the rationing. It negotiates an

annual gas balance with the governmental authorities. The balance is distributed to the regions and the industrial consumers. The awarded quotas are supplied at regulated tariffs (the quotas can be adjusted every quarter). A customer can buy additional supply later at higher tariffs from Gazprom or from an independent gas producer. Gazprom is very dominant from a financial perspective too, since in 2000 20% of federal budget revenues and about 20% of convertible currency revenues were earned through Gazprom sales (IEA, 2002). Gazprom wants to, and actually does, raise domestic and CIS prices. According to Gazprom, residential prices have been at a loss-making level up to 2003.⁵ In addition, current events show Gazprom not only increasing prices for deliveries to Ukraine but also to Moldova and Bulgaria. This diversifies export revenues and reduces Gazprom's dependence on European exports.

Higher prices will have an impact on industrial gas demand, as most power generators have installed dual-firing capacity, allowing them to switch to coal. The switch rate between gas and coal, among others, will determine the price elasticity of gas demand and therefore Gazprom's profits in this regard. Price elasticities for Russian gas demand are almost non-existing (Sagen and Tsygankova, 2006). One reason for this might be that industrial gas prices have not yet been high enough to stimulate demand-side responses. The very small number of elasticities that can be found in the literature range from nearly zero (Solodnikova, 2003) to -0.5 (Holtsmark and Mæstad, 2002; Tarr and Thomson, 2004). Though we should not attach any definitive conclusion to these few elasticities, the numbers in fact confirm the generally accepted observation that short-term Russian industrial gas demand is inelastic—for instance because power sector demand is rapidly increasing and/or because of the long lead times for building new coal or nuclear plants (Stern, 2006b). This implies that Gazprom will increase its profits if unified gas prices are introduced. This would enable Gazprom to undertake much-needed investments in Russia's gas sector (investments are needed across the entire value chain). Residential prices will be left untouched. Given the cold climate, poor consumers should be protected against large price increases (Tarr and Thomson, 2004). The EU negotiators within the WTO Accession Working Party on Russia did not insist on also increasing residential prices either (Wright, 2003). Russia may continue to subsidize its residential gas prices, because these prices are unrelated to international trade. Therefore, only industrial prices will rise and residential prices will remain regulated and subsidized.

A drawback to Gazprom of unified pricing might be an increased level of non-payment. The impact of this depends, among others, on the ability to cut off non-payers or, when this proves to be impossible, transferring gas supplies to export markets. Unfortunately, there is

⁴This document is only available in Russian. See Ivanov (2003) and Götz (2005) for a discussion of its main goals and consequences in English.

⁵See <http://eng.gazpromquestions.ru/page9.shtml>.

considerable uncertainty on this issue. For instance, will industrial consumers in the coming years be obliged to pay for their gas timely and in cash, or will they be able to escape paying the higher prices? There is no specific government policy obliging consumers to always pay their gas in cash, but there is a Gazprom policy to ensure cash payment. From 1997 on, payment discipline appears to have increased considerably (Stern, 2005). There is, however, uncertainty on whether this is a structural trend or that payment discipline has increased on the back of a rising economic trend and might consequently fall back when the trend reverses.

The ability to transfer gas supplies to export markets depends on the availability of sufficient high-quality transport capacity. Short-term transport capacity appears to be adequate, as the Ukrainian pipeline system can be adapted to accommodate an additional 40 billion cubic meter (bcm) of supplies at relatively low cost. If we compare this with the current export capacity which has been estimated at approximately 190 bcm, spare capacity is substantial (Götz, 2005; Stern, 2005). However, 2010 gas demand in (OECD) Europe is projected to have increased by approximately 90 bcm (IEA, 2005). By then, current spare capacity will not be sufficient anymore. Diverting domestic gas supplies to Europe will thus in the longer-term require additional investments—in for instance new export pipelines—making its prospect somewhat uncertain. No matter how such projects develop—whether, for instance, a second Baltic Pipeline will be developed after 2010—transit through Ukraine will remain substantial. Moreover, the Ukrainian network has suffered from a lack of investments, making it necessary to devote substantial investments into renovating the network in order to uphold current capacity, let alone to increase these volumes (Stern, 2005, 2006b).

If in the future Russian gas market non-payers can be cut off effectively from supplies and export capacity is adequate, Gazprom will see merely advantages of unified pricing. There currently is, however, considerable uncertainty about whether these two conditions will be fulfilled. This uncertainty will diminish somewhat Gazprom's advantages from unified pricing.

Independent gas companies—gas companies not fully owned by Gazprom, such as gas-producing oil companies like TNK/BP and Lukoil or independent gas suppliers such as Itera and Novatek—are in a different situation than Gazprom because their prices are not regulated; they can charge any price they think is appropriate. Independents' gas deliveries not delivered to Gazprom are almost completely dedicated to the power and industrial sector. Stern (2005) argues that the independents are in fact able to profitably sell their gas to industrial consumers directly, but that they might nevertheless also still have incentives (or obligations) to sell to Gazprom. Introduction of unified pricing would not directly affect independents' prices, but would allow them to increase their prices on the back of Gazprom's. Making the regulated market more attractive

to the independents could increase their market share and investments, lowering Gazprom's dominance. Whether this will materialize, however, also depends on a number of factors outside the scope of this paper. The most conspicuous factor is access to Gazprom's transport system—Gazprom owns and controls the transmission grids and storage and export facilities as well as the largest part of the distribution grids (IEA, 2002; Stern, 2005). This provides Gazprom with entry-deterrence opportunities (Ahrend and Tompson, 2005). With the risk present that access to pipelines or storage facilities might be provided on a discriminatory basis or not at all, independents contesting Gazprom's market share might prove to be unfeasible after all. From the perspective of the independents themselves, not being able to gain a significant role in gas trade is not necessarily perceived as a bad thing, because it has been observed that for instance Lukoil is to sell its gas Gazprom at the entrance of the transmission system (Stern, 2005). However, a more significant role of independents will entail benefits related to market development/reform; see Section 4.3.

Industrial energy intensive consumers—export-oriented companies such as steel manufacturers, producers of fertilizers, etc.—will face higher energy costs since their prices will be increased. With residential gas prices remaining regulated and subsidized, these companies will not be able to pass on their increased costs to consumers. Most power plants in Russia have been built with dual-firing capacity. To the extent that the gas price will exceed that of coal, switching to coal might decrease industrial gas demand. Industrial consumer's 2003 gas price was approximately 70% of the domestic coal price for power stations (Dudek et al., 2006). This implies that unified gas pricing, by quintupling gas prices, might very well result in massive fuel switching. However, the coal sector might not be able to absorb the higher coal demand resulting from fuel switching. First, in order to achieve the targets set in the Energy Strategy, coal production is anticipated to rise by approximately 75% by 2020. There are doubts whether this target can be achieved (IEA, 2002). Introduction of unified pricing would, by making coal attractive compared to gas, increase the demand placed on the coal sector. The coal capital stock is to a large extent depreciated or outdated. Moreover, coal is being produced in a limited number of often remote regions, creating a lot of inter-regional, long-distance coal transport. Coal is predominantly being transported by train. Russia's railways are in a poor state of maintenance, creating, among others, frequent breakdowns, a shortage of coal wagons, and a lack of line capacity (IEA, 2002). Thus, coal market developments are essential for fuel switching to have a significant impact on industrial gas demand and the outlook of the coal market being able to absorb increased coal demand after massive fuel switching is not very positive.

Moreover, industrial gas demand might be lowered by companies going out of business. This situation has potentially significant consequences. These and other issues

will be discussed in Sections 4.2 and 4.3 where we discuss the governmental perspective and some additional considerations.

4.2. *The Russian government*

The Russian government has ambivalent incentives towards unified gas pricing. This is attributable to the three roles that the Russian government performs. First, there is the role of shareholder of Gazprom: she holds a 51% share in Gazprom.⁶ This enables her to control Gazprom's actions and is the reason why Gazprom is widely regarded as an extension of the Russian government. This observation is amplified by the fact that the FTS determines Gazprom's prices. The incentive here is clearly to increase profits as much as possible, because 51% of Gazprom's profits will flow into the Treasury. From a shareholder perspective, unified gas pricing will be advantageous. The government is also a tax collector. This provides a similar incentive as the shareholder role. However, it should be acknowledged that tax payments from energy intensive users will decline. Nevertheless, these two roles combined will provide the Russian government incentives to pursue unified pricing. However, the incentives for unified pricing will be seriously undermined when we consider the third role of the Russian government: creating a social safety net for its residents. This is attributable to the stakeholders influencing the government. The Russian government will be influenced by the European Union and the WTO, Russian (energy intensive) companies, and the Russian provinces, among others. Because she will inherit most social problems emanating from higher gas prices, the government can be assumed to have lower incentives to increase Russian domestic gas prices. The remainder of this section will elaborate on this.

As residential prices are expected to stay regulated for still a considerable period of time, substantial problems with poor residential consumers are not likely in the short-term. Social problems will arise as the energy-intensive companies are confronted with higher costs and will see their competitive advantage vis-à-vis their European counterparts vanish. This might result in rising unemployment levels that have some nasty trickle-down effects.

Russian energy-intensive companies will face significantly higher prices. Their inefficient energy use will magnify the effect. This in itself has negative consequences for Russia's economy, as higher energy costs will lower production levels and, therefore, economic growth. In addition, Russia's energy intensive companies are vulnerable to price increases—especially if the price would quintuple under unified pricing. The vulnerability would increase even more when non-payment would be eliminated and all payments would be in cash. Therefore, bankruptcies of a number of energy intensive companies

are conceivable. Of course, these companies might also become incentivized to invest in energy efficiency (see the next section). Unfortunately, there is not much certainty yet on which effect will dominate to what extent. For the Russian government, however, the possibility of bankruptcy and resulting rising unemployment levels is a very serious risk that significantly diminishes its incentives towards unified prices, because it drives a number of related social and political problems.⁷ Averting high levels of unemployment has in fact been an important reason for subsidizing industrial consumers.

Considering the economic and political problems associated with a rising unemployment level, it is imaginable that a government might not accept this as a fair (political) price to pay for increasing energy efficiency in the industrial sector. Moreover, additional social problems could be substantial. This can be seen when we consider Russia's social security system. In short, Russia inherited a social security system from the Soviet Union in which provisions were closely linked to enterprises. In the 1990s a de-linking had been established and social security became tax based. However, budget revenues are insufficient to offer the old package. If a significant number of people would lose their job, they would have to rely on regional governments—the Russian provinces—for support. They do not have the kind of money to finance a large amount of unemployment benefits. If the regional governments appear able to pay (some) social security benefits, social subsidy payments would increase. These subsidy payments are a cost that should be compared to any increase in dividend or tax payments.

The government will gain from unified pricing via an increase in dividend and tax payments. There are, however, serious drawbacks associated with unified pricing, such as higher energy costs to energy intensive companies which lower economic growth and a worsened competitive position of Russian energy intensive companies compared to their European counterparts. Moreover, potentially significant social consequences further diminish the advantages. It can thus be maintained that, from a Russian perspective, a price increase will in fact be welcomed, but that the increase should not be so large as to increase the price up to the netback European export level.

4.3. *Additional considerations*

It has been mentioned in section three that rising gas prices will result in dual-fired power generators switching from gas to coal, provided that the coal market is able to absorb the increase in demand. Increased coal use,

⁶This has not always been the case. The government retook it in several consolidation efforts early 2003 and September 2004.

⁷One of the main reasons for this effect is actually dual gas pricing which provides a very low incentive to energy intensive companies, if any, to use energy efficiently. However, this energy inefficiency nowadays appears to be an important reason for the Russian government to retain this policy. This situation thus potentially creates a vicious circle in which reform is being dismissed based on arguments that actually create the need for reform.

however, will considerably increase pollution levels. As the environment is quickly gaining importance in present-day energy policy, this implies that increased coal use will become an increasingly important drawback of unified pricing.

Unified gas pricing will stimulate market reform. Power generators' gas demand could become more efficient when they would be able to switch. Independent suppliers being able to deliver gas alongside near-monopolist Gazprom would greatly contribute to market reform. Rising gas prices provide the independents a greater scope for increasing their share of the regulated market. However, this also depends on other developments, such as the ability to obtain non-discriminatory access to Gazprom's assets. A second advantage of higher prices is that it curbs Russia's very high energy demand. Subsidized gas prices have resulted in a significant over-use of gas. Gas prices at European levels would confront gas consumers with the full (opportunity) costs of their gas use, hereby increasing the efficiency of their use (through for instance more investments in energy efficiency). Third, private capital to finance investments will at higher prices be attracted more easily and could in the longer-term alleviate production and transport capacity concerns. Moreover, the independents also could increase their investments and production levels increasing Russia's total production capacity. This to a large extent depends on the transparency and credibility of the regulatory regime.

Let us summarize Russia's incentives towards introducing unified gas prices. There are a number of advantages to Russia. We have argued that Gazprom clearly has incentives to introduce unified gas pricing. Domestic profits will increase, creating scope for much-needed investments whilst also lowering its dependence on foreign, predominantly European, export revenues. The independents might have more scope for increasing their market share and production levels. From the perspective of market reform, the incentive clearly is to increase industrial prices (and ultimately also residential prices), as gas use will be more efficient and investments might increase. There is also a clear need for reform: for instance, most capital stock has been outdated and should be replaced in order to create a healthy economy. To the extent that higher gas prices result in fuel switching away from gas, the environment could worsen under unified gas pricing; this effect should be compared to environmental advantages associated with more efficient gas use.

We do not aim to dispute the need for reform or indeed the need for industrial price increases; rather, we argue that European export prices are not the right benchmark if we consider the incentives pertaining to the Russian government. The Russian government performs three roles with respect to domestic gas pricing. If we combine the roles of shareholder and tax collector, the incentive will be to introduce unified gas prices. However, its social role implies much more moderate incentives, as unified gas pricing will result in substantial social problems. A reason

for this might be the uneven allocation of costs and benefits: higher profits associated with increased prices pertain to Gazprom and the independents and to a certain extent through dividends and taxes to the government, whereas the costs are largely borne by the (regional) government. From a governmental perspective, unified gas pricing will not be welcomed.

With the Russian government being able to dictate Gazprom's actions through its majority share as well as via the FTS, we can assume that unified gas pricing will not be introduced if it were up to Russia. This is understandable, considering the potential drawbacks; a moderate price increase would be a better option.⁸ This argument coincides with the findings of Tarr and Thomson who argue that Russia should raise its domestic (i.e., industrial and residential) price level, but only up to the level of its long-run marginal cost (LRMC) (Tarr and Thomson, 2004). They estimate the LRMC to be around \$ 35–\$ 40/TCM, which is approximately equivalent to Gazprom's estimate of the price level needed to maintain current production levels, but significantly lower than the prices envisaged in the Energy Strategy. Even though we only focus on industrial prices, this confirms our argument that Russia's incentives do not favor unified gas prices. However, given the lack of cost transparency, the actual level of prices needed to cover the LRMC is extremely difficult to determine. According to Ahrend and Tompson (2004), most projections that allow Gazprom to replace fixed assets and/or develop new fields and transport infrastructure fall between \$ 22–35/TCM. Tarr and Thomson are thus at the high end of the projections, mainly because they also consider environmental costs to be a part of the LRMC. However, recent projections suggest that even the \$ 35–40 projection will probably be too low. For instance, Stern (2005) argues that industrial consumers in the Moscow pricing zone will need to pay at least \$ 60/TCM (in 2004 dollars at 2004 exchange rates; at the current exchange rate, this would amount to almost \$ 67) in order to allow development of the Yamal Peninsula—which according to Stern should probably be regarded as Gazprom's true LRMC—to take place. Notwithstanding the inherent difficulties in obtaining reliable cost information as well as making predictions on future price developments, the above has illustrated that the LRMC are and will remain for a considerable period of time significantly under the unified pricing benchmark.

⁸The emphasis in this article has been on increasing domestic Russian gas prices in order to remove any unfair advantage from dual pricing. Alternatively, one could opt for decreasing export prices to Europe. We should note that Russia's economic incentives do not point in this direction since (1) Russia possesses considerable market power and has the ability to price-discriminate between domestic deliveries and exports; and (2) lowering export prices would transfer gas rents downstream to EU transmission/distribution companies. As long as Gazprom is not firmly vertically integrated downstream into European gas markets, gas revenues to Gazprom would diminish.

5. The European perspective

Even though the discussion on raising Russian domestic gas prices is also initiated by Europe, it can be maintained that even from a European perspective it would be unwise to introduce unified pricing. This section first discusses two commonly expressed advantages to Europe of unified pricing and will claim that both advantages are overstated. Second, it will be maintained that security of supply might even deteriorate. Demanding an equalization of domestic and export prices is, for Europe, understandable indeed as it creates a level playing field. It is expected that the future gas market will have an oligopoly-like market structure in which Russia will be an important player with almost a third of proven global reserves (IEA, 2005). This has consequences for Europe's incentives towards unified pricing. Most arguments in favor of unified pricing emphasize increasing volumes of gas flowing to Europe. One argument asserts that higher domestic Russian gas prices will decrease domestic Russian gas demand. This excess supply will then be diverted to exports, a part of which might end up in Europe, benefiting European consumers through increased supplies and lower prices. Another often-heard advantage is that unified pricing provides Russian gas supplying companies more possibilities to invest in Russia's gas sector (see above), leading to a higher Russian gas production or a higher-quality infrastructure heading into Europe. According to both arguments, security of supply will improve.

A number of reservations should be made, however. It should first be noted that diversification of supplies is a very important factor with respect to securing energy supplies. The importance of diversification is highlighted by the fact that supply diversification is considered one of the six priority areas for European policy (CEC, 2006). More Russian gas in addition to the already vast Russian gas supplies flowing into Europe does not necessarily add to security of supply in this regard. It might even divert attention away from diversifying supplies to other routes and/or energy sources.

Second, the arguments should be treated with caution since both of them are based on the assumption that the increased exports—either through lower domestic demand or higher production capacity—will automatically be diverted to Europe. This is not necessarily the case. The likelihood of this happening, first of all depends on the competition for this gas from e.g. the USA⁹ and China. The location of production is of vital importance here. The usual assumption is that when gas fields in the western part of Russia—i.e., Urengoy, Yamburg, Medvezh'e, Shtokmanovskoye, or the Yamal peninsula—are developed, the

resulting gas volumes are likely to flow to Europe because this entails relatively low transport costs. However, Europe will have to share some of the West Siberian reserves with Asian competitors, because some of these might flow east (see further on). If, on the other hand, the Eastern Siberian and/or Far Eastern fields—i.e., Irkutsk, Krasnoyarsk, Sakha, or Sakhalin—are being developed, gas is assumed to flow into Asia. Pipelined gas from the east flowing into Europe seems unlikely when we consider the transportation cost involved. The majority of Russian gas production has taken place in the western part with Urengoy, Yamburg and Medvezh'e accounting for approximately 65% of total Russian gas production. However, all three are in decline (IEA, 2002; Ahrend and Thompson, 2004, 2005; Stern, 2005). Beyond this observation things tend to get opaque. Declining production levels from these three giant fields will increasingly need to be replaced by new production—either by Gazprom or the independents.

Two promising candidates are the giant fields in the Yamal peninsula and the Shtokmanovskoye field in the Barents Sea. However, whether this will effectively alleviate the declining Western Siberian production levels or not is not clear (see IEA, 2002; CIEP, 2004; Stern, 2005). What we are sure of is that even if Western Siberian production levels will remain constant, production costs will rise considerably. After all, the Shtokmanovskoye field is an arctic offshore gas field, making development relatively expensive. Developing the Yamal peninsula will be even more expensive, since these fields are located in environmentally fragile areas. Production from these new fields has not yet commenced, which might indicate that even higher prices are necessary for profitable development.

To complicate matters even more, the new energy paradigm warrants attention (Helm, 2005; CIEP, 2006). Europe is expected to increasingly having to compete for their gas supplies with other demand centres. Regarding pipelined gas, there is an asymmetry since building a pipeline connecting Europe to the Far Eastern gas fields is economically unviable, whereas China, for instance, is able to tap into Western Siberian as well as eastern gas fields. This is evidenced by the recent, March 2006, agreement between Russia and China to construct two pipelines delivering gas from the east as well as from Western Siberia. Opinions on this agreement are not very positive. Stern (2006a, b) observes that the Altai Pipeline connecting China to Western Siberia is economically unattractive to both parties but that it cannot be ruled out. Götz (2006b) argues that developing both pipelines might make Russia too dependent on China; he asserts that the Altai Pipeline will be the first to be developed. Although both authors' opinions differ on the prospect of China becoming a competitor for European gas, at this point developments indicate that this option cannot be disregarded—even more so if we observe that geopolitical considerations are becoming increasingly important in gas relationships. Finally, it is sometimes asserted that production increases

⁹At the time of writing this article Gazprom announced, at October 9, that most of the Shtokman field's gas will flow through the Baltic Pipeline to Europe, rather than via LNG to the US as had originally been planned. This would make US competition for supplies much less of a threat. See Gazprom (2006).

will predominantly take place in the Eastern part (Götz, 2005). This could significantly increase the asymmetry between Europe and China. These are two further considerations that should diminish further European optimism regarding unified Russian gas prices. All in all, advantages of unified gas pricing regarding security of supply are generally overstated since (1) diversification of supplies might worsen; (2) the presumed increase in Russian exports to Europe might not materialize—either as a consequence of insufficient Russian production capacity or increased deliveries to other demand centres; and (3) when exports indeed increase, production costs and, therefore, gas prices will rise.

Moreover, unified gas pricing in Russia could even worsen European security of supply. An often ignored or forgotten consideration which is indeed very important for the European gas market is Europe's status as a premium market Russian gas. When domestic Russian gas prices are ramped up to Europe's level, this status will disappear. The same holds for increasing prices of CIS and former Eastern Bloc countries. With dual gas pricing present, Russia will have an incentive to direct exports to Europe—directing exports into Europe currently is a main pillar of Russia's export strategy (Locatelli, 2004). As a result of unified gas pricing, however, Russia's incentive to export to Europe will diminish, because selling their gas domestically or locally into CIS countries will generate equal profits. This will not have any consequences for existing pipelines and supply contracts, but obtaining additional Russian supplies to satisfy the increasing European gas demand might be hampered. This would seriously increase Europe's security of supply concerns, which already are one of European energy policy's greatest anxieties.

6. Conclusions

This paper has set out to combine research on the EU–Russia relationship with research on Russia's internal gas-pricing policy in order to arrive at a comprehensive analysis of the both parties' incentives to replace Russia's dual gas pricing with a uniform pricing policy. We have seen that both Russia and Europe have incentives to increase Russia's domestic gas prices. However, Russia will face seriously negative social consequences if unified pricing is introduced. This leads us to conclude that from a Russian perspective, European export prices are not the right benchmark. For Europe the same conclusion holds since advantages are generally overstated and security of supply might worsen. This paper argues that Europe should change its act with respect to Russia in the following ways:

- The EU–Russia Energy Dialogue explicitly mentions the interdependence between Russia and Europe. European reactions to the gas struggle between Russia and the Ukraine, however, appear to neglect this. Whatever the underlying reasons for this neglect, acknowledging this

interdependence, also in turbulent market conditions, will decrease concerns and improve bilateral relations between EU and Russia.

- It has been argued that Russia does not have the incentives to introduce unified gas pricing. Urging Russia into doing this regardless will worsen the relationship with them. In addition, it has also been argued that the perceived advantages of unified gas prices to Europe are overstated, and that security of supply might even deteriorate. Consequently, Europe should not push Russia into introducing unified gas prices.
- Russian exports automatically flowing to Europe cannot be taken for granted anymore. There are at least three reasons for this. First, for Russian exports to flow to Europe, production increases should take place in Western Siberia. The outlook for this materializing is not unanimously positive. Second, China is relatively better placed to obtain Russian gas supplies as they can tap into western as well as eastern gas fields. Europe would therefore be wise to realize this and not assume that gas reserves, even if Russia manages to increase its production and despite the fact the Europe has historically been the major consumer of Russian gas, will automatically flow to Europe. Third, the gas struggle mentioned in the first paragraph is an indication of Russia focusing on making CIS markets more profitable. The increased attractiveness of CIS markets at higher, not anymore subsidized prices decreases further the outlook for Europe.

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