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EU–Russia Gas Relations

How to Manage New Uncertainties and Imbalances

Ralf Dickel and Kirsten Westphal

EU–Russia gas relations are at a critical stage in 2012. Uncertainty is predominant: The balance between security of supply and security of demand is under threat and long-term business relations are under pressure from market developments and a new regulatory framework. Decarbonization efforts in major EU member states have initiated an energy transition that will diminish the role of gas in the long run. Considering the current inertia in the EU–Russia Energy Dialogue, there is a need to look for ways that accommodate both partners' interests in a reliable but more flexible gas trade partnership over the next decades as well as ways to modernize the energy partnership in light of climate change. In a first step, EU gas Transmission System Operators should take responsibility in coordinating and ensuring access for all gas exporters to all customers inside the EU. This preserves valid supply arrangements and creates effective choice.

Frictions and uncertainty in the bilateral relationship have been rising for the last few years. EU–Russia gas relations have come a long way since the first gas deliveries started to flow across the border from the USSR to Austria in 1968 and to Germany in 1973. Since then, natural gas from Siberia has played an important role in West European countries for diversification in the energy mix and for energy security during the two oil price crises in the 1970s. In the Council for Mutual Economic Assistance (COMECON) in the Eastern Bloc, gas exports had served as a tool to bind the socialist planning economies together.

With the dissolution of COMECON and the Soviet Union in 1991, for the Russian side transport issues became transit issues.

This fact had for a long time not really been on the screen of the Western European consumers. The heyday of the EU–Russia energy relationship was the establishment of the EU–Russia Energy Dialogue in 2000, when Romano Prodi, then President of the EU Commission, announced the goal of doubling Russian gas imports to the EU. The EU–Russia Energy Dialogue aimed for an ever closer common energy space. Yet, the rapprochement proved to be more difficult: Oil – and subsequently gas – prices steadily increased; as a consequence Russia took a more concerted stance toward renationalization of its oil industry after 2002; and the EU changed its gas market structure. In 1998, the first gas directive (Directive 98/30/EC) to create an open and

competitive internal market was published, followed by the second directive in 2003 (Directive 2003/55/EC). The Russia-Ukraine gas dispute of 2006 resulted in a shake-up of the relationship with the EU. Security of supply became predominant in EU energy debates and the issue was almost exclusively attributed to Russian supplies. High import-dependency developed as a paramount concern and a driver for the quest toward a common external energy policy. The Russian side countered by raising the issue of security of demand and accused the EU of double standards. The discussions became politicized and “securitization” somehow led to a (rhetorical) race over diversification. The EU promoted the Southern Corridor with a view toward promoting access to gas resources in the Caspian region and the Middle East. Russia in turn started to export liquefied natural gas (LNG) from Sakhalin to Asia and announced the intent to sell more gas to Asian customers, first and foremost to China.

2009: The Start of a New Phase of Uncertainties

The year 2009 proved to be a watershed and the beginning of a new phase. First, the EU-27 drew lessons from the Russian-Ukrainian gas crisis at the beginning of the year and “interconnectivity” of the European markets became the primary focus. A reorientation toward the internal market and genuine integration as a means to achieve more supply security became commonly accepted ideas. First and foremost, solidarity in energy matters was embedded in the EU primary law in Article 194 of the Lisbon Treaty, which entered into force in December 2009. Moreover, the Third Energy Package was adopted in June 2009.

The stronger approach toward integrated, open, and competitive markets in the Third Energy Package of 2009 was favored by fundamental changes on the global gas markets. The US shale gas revolution unfolded: By 2009 shale gas production in the United States reached 88 billion cubic

meters per annum (bcm/pa) compared to less than 10 bcm/pa in 2000. As a consequence, LNG volumes in the Atlantic basin, originally earmarked for the United States, were redirected to the EU. At the same time, the economic crisis resulted in decreased demand. The EU markets found themselves in a “gas glut.” In the EU, LNG re-gasification capacity more than doubled over five years to 175 bcm/pa by 2010, based on commercial considerations, often with strong political support. LNG imports grew to almost a quarter of EU imports; 22 percent of the EU’s total net supplies originated in Russia in 2010, compared to 35 percent indigenous production from EU countries.

Prices on the developing northwest European gas spot markets plummeted with the arrival of large volumes of Qatari LNG in mid-2009. The flipside of this comfortable situation was that gas prices of oil-indexed long-term contracts (LTCs) were substantially higher: At their lowest price levels in August 2009, UK National Balancing Point prices were at about 8 €/MWh, compared with about 16 €/MWh under import LTCs. Thereafter, spot prices tended to increase more than LTC prices, still leaving a substantial gap of several euros per MWh. In retrospect, the year 2009 was a watershed in EU–Russia gas relations because many close business partnerships, and even alliances, lost their common ground. Besides these uneven developments in the gas sector, bilateral relations in general became more complicated. The EU–Russia Energy Dialogue has made little progress, and negotiations for a new Partnership and Cooperation Agreement have likewise progressed slowly. A recent initiative under the auspices of the EU–Russia Energy Dialogue to approach the new landscape and market situation in the gas sector is the EU–Russia Gas Advisory Council (GAC). It is building on informal consultations that have taken place since January 2010 between Russian and EU experts on the implications for Russia regarding the Third Energy Package. Organized under the auspices of the Russian Ministry of Energy and the DG ENER of the

EU Commission, the GAC first met on October 17, 2011. It addresses long-term trends of EU–Russia gas relations, the organization and structure of the EU and Russian gas markets, as well as the short- and long-term implications for the gas infrastructure.

From Stable Relations to the Need for Future Flexibility

The close EU–Russia gas relationship has stemmed from the fact that the Soviet Union/Russia is endowed with large gas reserves, whereas the EU is heavily import-dependent. Complementary interests are the basis for the EU–Russia partnership. However, EU member states are bringing different perspectives to the table.

From a Western European perspective, gas trade based on LTCs at the import level have played a positive role in balancing security of supply and security of demand and in stabilizing bilateral relations. A most impressive gas infrastructure linking Russia with major Western European countries has been built. Russia has been a reliable supplier and maintained its obligations to supply the contractual volumes, and its EU partners have reliably paid their bills and have always taken the minimum pay volumes (usually about 80 percent of the supply obligation). Russia (like Norway and Algeria) has made the necessary investments for the production of gas and the necessary infrastructure to fulfill its contractual obligations. On the EU side, the “take or pay” obligations of the importing companies (the present contract partners of Gazprom) has been based on their capacity to pass the respective volume obligations and the pricing down the gas chain to their customers. This capacity of gas import companies is now eroding with EU market reforms and fundamental changes in the gas market.

The way minimum pay obligations of importing companies were passed down the gas chain is arranged differently in different countries. In countries like France or Belgium, whose markets – right down to the individual residential and commercial

customers – were originally served by a national monopoly supplier, it was a straightforward process of passing on pricing and minimum pay conditions. Even now, with the market opening up and competition from new market entrants, the incumbent companies can hedge their import obligations down the chain to their large customer bases.

By contrast, the German gas market is characterized by its three-tier structure: import companies, municipal utilities (*Stadtwerke*)/regional gas companies, and finally the end-consumer. The utilities and regional companies serve as a first-demand aggregation level (of the end-consumers). They, in turn, (used to) purchase their gas from import companies, which aggregated the demand of utilities and regional companies and acted as business partners of Gazprom.

The minimum pay obligations in German gas import contracts had long been covered by downstream contracts based on exclusive concessions. These exclusive concessions and demarcations were abolished in April 1998 and replaced by downstream LTCs, which reflected the conditions of the import LTCs. In 2006 the Federal Cartel Authority issued a decision applicable until September 30, 2010, which restricted downstream LTCs: Volumes of up to 50 percent could be contracted without time limitations; volumes between 50 and 80 percent for up to four years; and volumes above 80 percent for up to two years. Even with that restriction, the terms of import LTCs could be passed on, based on a lack of excess supply capacity in the German market. This situation changed abruptly with the arrival of large volumes of Qatari LNG to northwest European LNG terminals as of mid-2009, triggering a glut of gas available to second-tier buyers in Germany. In both the German and other cases, the possibility to grant minimum pay volumes under import contracts is eroding, altering the balance between security of supply and security of demand.

However, for the new EU member states, the story of gas relations with Russia reads

differently: While gas supply contracts with the West were freely negotiated agreements at the company level with a commercial balance between supply and payment obligations, gas supplies in the former COMECON states were concluded at the state level. As a rule, these were implemented by ministries or state companies on the basis of barter deals, for example gas deliveries as a compensation for participating in the construction of big gas pipeline projects, and/or as a compensation for transit permissions. For new EU member states, the issue of security of supply is dominated by high import-dependency from Russia. Due to history as well as geography, most new EU member states have an import-dependence on Russian gas that is close to 100 percent; before 2009 only very few (the Czech Republic and Hungary in the context of import diversification) had installed reverse-flow capacity for their gas transport systems. While north-west Europe is linked to pipelines from Russia, the Netherlands, and Norway, as well as to the UK market and to various LNG terminals, the new EU member states are physically linked only to Russian gas, now with reverse-flow capacity also to the gas markets of their Western neighbors. Future diversification possibilities beyond domestic supplies (with big hopes for shale gas) are physically limited to supplies from Azerbaijan and Turkmenistan and to LNG via other countries. Virtually, the Third Energy Package offers swap gas deals, which, however, do not alter the present physical infrastructure for gas deliveries in the EU. Another element worth mentioning is the impact of the Energy Community, which transposes EU energy rules to its members. Through that mechanism, EU rules will be expanded to Ukraine, Moldova, and the Balkans.

The Third Energy Package: What is in Russia's Interest ... and the EU's?

As the largest gas supplier to the EU, Russia has raised a number of issues shared by other gas suppliers to the EU that are related to the Third Energy Package and its imple-

mentation. While the approach of the EU to create a single, open, and competitive gas market is an internal EU matter, Russia, as the largest gas exporter, feels that this is against its interests and jeopardizes the Russian position and the predictability and handling of its future gas supplies to the EU. Parts of the Russia position can be explained by its preference for the traditional contractual organization of the gas market and skepticism about the workings of a competitive or traded gas market. However, there are certain aspects that have been criticized by Russia that deserve attention from the EU, as they point to obstacles for market development that are not in the interest of either side. The EU should listen to concerns about security of demand and identify hurdles in delivering gas to customers across different EU market areas.

A major Russian concern is how the complex and long-distance transport of gas across the EU to its customers will be arranged, once the old structure of LTCs at the import level erodes – and/or the long-term transportation contracts linked to them. And indeed, the EU's objective to create one single gas market based on an entry-exit system continues to face tremendous challenges. At present, more than 20 virtual market areas exist in the EU, mainly in line with the territory of those EU member states that comprise a gas market. It is worth noting that Germany succeeded in reducing the number of market areas from 19 in 2006 to two in 2011 – which was a big challenge and achievement of the Transmission System Operators (TSOs) involved.

How the regulations, network codes, taxes, etc., can be harmonized between different EU countries is now the subject of discussions around the Gas Target Model. Under the current draft Target Model, exporters would have to auction transport capacity at entry and exit points for every market area that its gas passes through. This comes with high uncertainty if all necessary transport capacities are to be lined up along the route through a multitude of EU countries with differently organized

transport systems. On top of this is the issue of capacity creation in case of bottlenecks for single years. Given the longevity of the upstream infrastructure (but also some heavy investment downstream, e.g. in new power plants), there is an interest in allowing for long-term capacity booking; the draft Target Model provides the possibility to book capacity on a year-by-year basis for up to 15 years. An open issue is how to deal with temporary or long-term bottlenecks, and their removal, through investment to create new capacity. Russian as well as other gas exporters have an interest in seeing that solutions to these challenges are found so that they have a realistic chance to reliably market gas on the present scale, and are not impeded by a lack of transportation/transfer solutions for delivering gas to the customers. This is also necessary to ensure there is a choice between suppliers from outside the EU for EU customers. The EU would also face a problem if substantial amounts of Russian or other gas were prevented from reaching the EU markets for reasons other than competitiveness. This holds especially true in view of the role that gas can play in the decarbonization of the energy sector over the next decades.

Decarbonization and Unprecedented Uncertainty

The role of gas in the EU will change over the next decades and be strongly influenced by the need for decarbonization to mitigate the risks of climate change. As regards an integrated energy and climate policy, the big question remains as to how many member states will embark on the process of energy transition and commit themselves to binding targets beyond 2020.

A greenhouse gas reduction target for 2050 of at least 80 percent (vs. 1990) for industrialized countries leaves room for gas mainly as a transition fuel and/or for power generation with carbon capture and storage (CCS). This may give gas a prominent role as the preferred fossil fuel for a transition period due to its lower carbon content and

higher efficiency and better utilization capacity for combined heat and power (CHP). The objective to reduce CO₂ emissions to near zero levels by 2050 implies de facto that gas, like other fossil fuels, could only be used in some niche positions where its use is unavoidable. The future role of gas comes with substantial uncertainties stemming from unclear price signals for carbon emissions. The EU Energy Roadmap for 2050 is very telling in that respect: Even in this decade leading to 2020, the scenarios for gas consumption range between minus 5.6 percent to plus 20.7 percent. Similarly, the scenarios for Germany approved by the National Regulatory Authority (*Bundesnetzagentur*) for 2022 provide for reductions of primary gas consumption between 11 and 19 percent and in imports between 4 and 14 percent.

The question is at what speed and intensity these plans for a low-carbon – or even widely decarbonized – energy system can be achieved. The United Kingdom's Climate Change Act of 2009, Germany's Energy Concept of 2010 (amended in 2011), and the Energy Agreement of Denmark in 2012 are the most concrete efforts – aside from the Commission's EU Energy Roadmap 2050 – that address the greenhouse gas reduction challenge. Besides question marks on the common ground for an integrated climate and energy policy in the EU, there is also uncertainty on the future role of nuclear power in the EU after the Fukushima Daiichi nuclear catastrophe in Japan in March 2011. The existing fleet of nuclear plants in the EU is ageing, and only very few projects are under construction or past a final investment decision. Even if there was a political will to further the use of nuclear in the power mix, a question mark remains around the commercial and financial viability of the projects and their public acceptance. The German decarbonization policy – as defined in 2010 and reconfirmed in 2011, even under the extra condition of a nuclear phase-out by 2022 – will have spill-over effects to other (EU) countries as (i) it demonstrates feasibility and (ii) it fosters

technology development and cost decreases, thereby bringing new renewable technologies to the commercial range. For the time being, gas does not play a prominent role in Germany in replacing nuclear electricity production: Most of the time, the “spark spread” between the gas and the power market is negative (meaning that gas cannot be profitably used for power generation) and the price of carbon (emission allowances) is less than 10 €/t, reflecting an oversupply of emission allowances, which is a nuisance to industry but does not trigger substantial changes in the sector. Difficult discussions within the EU on future preferences for the energy mix, power market design, and emissions trading are foreseeable.

Taking this together, it is not yet clear which path the EU will embark on. Consequently, we may see a substantial reduction in gas demand outside of power generation due to a successful decarbonization policy, but we may also see a quick surge in demand for gas in power generation, with a corresponding increase in import needs. Yet, uncertainties – beyond the normal boom and bust cycles – are detrimental to investment decisions on both sides in view of the longevity of several decades of infrastructure investment. Such a situation of unprecedented and politically induced uncertainty demands political dialogue between consuming and supplying countries.

Engaging Russia Based on Complementary Interests

Resource-abundant Russia should be aware that the EU and/or member states – being resource poor but technologically advanced – will pursue a strategy of technology development that makes it more independent from resource imports and offers the opportunities to become a leader in new technologies. Such a strategy is not directed against anyone but driven by obvious self-interest. While international law declares sovereignty over resources, the resource rent that can be achieved depends on global supply and

demand. In the long run, this is strongly influenced by technological developments, both on the supply side (like LNG, shale gas) as well as on the demand side (decarbonization and environmental considerations).

Russia faces a potential devaluation of its gas reserves. This is a challenge for its depletion strategies and even more so for its wealth-creation strategy, but it can also be an incentive to join in modernization efforts. At least formally, Russia has moved forward in that respect during Dmitry Medvedev’s presidency. The Presidential Decree on Energy Efficiency of 2008 as well as the Climate Doctrine and the Energy Strategy that extends till 2030 (both 2009) point in that direction. Moreover, there are plenty of international declarations shared by Russia aiming to limit global warming at two degrees centigrade compared to pre-industrial levels. Russia has approved this goal within the G8, most specifically at the L’Aquila Summit in Italy in 2009, when Group leaders decided to reduce greenhouse gas emissions by 80 percent in 2050 compared to 1990 or more recent years. So far, concrete steps to implement this target on the national and international level have yet to materialize.

Russia has to be aware that the new market situation tends to diminish the value of Russian gas resources. It is not yet a given that the loss of traditional market segments can be compensated for by the use of gas for power generation. However, under present circumstances, the earnings from that sector tend to be below those from the traditional segment, mainly due to power generation overcapacity and the undervaluation of carbon emission rights at less than 10 €/t carbon.

At the same time, the EU should not be blind on that eye and neglect the challenges in gas relations. There are good reasons why gas will continue to play an important role as a clean fuel for wealth creation in the EU for several more decades. Regarding decarbonization, gas is the best fossil fuel to minimize CO₂ emissions for a transition period. Moreover, one certainty remains:

EU natural gas production will decline. Prospects for shale gas remain, especially in Poland. However, in March 2012, in view of first drilling results, commercial production is not in sight and reserves were downsized substantially (from about 5 trillion to the order of 1.9 trillion cubic meters). Therefore, the EU continues to need reliable gas supplies. Thus, Russia remains a primary and natural partner to meet significant parts of the EU's needs. The EU should therefore respond seriously to Russia's concerns. Even if China is not an immediate competitor, as it would require the building of new infrastructure, Russia has several alternatives to market its gas. Russia's own gas market, which is of similar size to the EU's gas market, can absorb large volumes. The developments of gas and electricity prices in Russia deserve attention, as they may change Gazprom's strong orientation to EU export markets and also the volumes exported to the EU. The policy to increase domestic gas prices to a level with the same wellhead earnings as exports to the EU is making the Russian gas market much more attractive to Gazprom. With more gas market pricing in the EU and Russia, both markets may develop more like communicating tubes driven by price differentials, as in US-Canada gas relations. However, without a stabilizing element from LTCs, the EU risks being short of gas, for example during a cold snap. The EU cannot expect a commitment from Russia for security of supply without a corresponding commitment to the security of demand by the EU.

Striving for Dynamic Stability: The Need for New Mechanisms and Instruments

To sum up, the complementarity of Russia's large reserves and the EU's import needs have worked out well over the past 40 years; it was organized on the basis of LTCs at the import level, which provided a fair balance of security of supply and security of demand. But times have changed.

Russia should take the EU policy for developing a single gas market and its climate policy seriously, even if it means facing new uncertainties and saying goodbye to the much-loved instrument of large LTCs at the import level. The valorization of Russian gas reserves by export to EU countries will not be as straightforward as in the past and will require more flexibility in the marketing approach. Not adopting to the new EU market structure – and beyond that, to new realities of the gas market – risks failure and unnecessary confrontation.

Diversification of gas supplies is of key interest for the EU. However, the EU depends on a handful of gas-exporting countries – two linked to EU rules (the Netherlands and Norway), the rest not (Russia, Algeria, Qatar) – and should be cautious not to create unnecessary hurdles for these countries to export their gas to the EU market nor to jeopardize successful supply links. The quest for more flexibility partly stems from political decisions but also from technology and market developments. In this situation, both sides have to look for new instruments to manage and balance supply and demand on a mutually satisfying level. This paves the way for a smooth transition and helps to hedge volatility, which is equally costly for both sides.

At the Gas Advisory Council, the following approach on how to combine Russia's interest in security of demand with more flexibility and competition – as foreseen in the Third Energy Package – emerged from the discussions: EU Transmission System Operators would have to coordinate and sort out, among themselves, ways of how to grant the transfer of gas from any entry point into the EU to any customer or marketplace inside the EU, in line with the entry-exit model. Like any other exporter of gas into the EU, Russia would be able to sell gas to any interested customer in the EU under valid conditions agreed with such a customer. To comply with the resulting delivery obligations, exporters to the EU markets would be able to deliver the gas at entry points into the EU, and the gas would be

made available at the respective exit points inside the EU gas markets. The transportation of the gas between the entry and exit points would be a matter of EU internal coordination (between the different TSOs). This includes coping with: different possible routes, different taxation in between entry and exit, the setting of an overall tariff, the splitting of revenues between the TSOs involved, etc. It would not be an easy undertaking but it would be feasible, as demonstrated by the reduction of market areas – from 19 down to two market areas in Germany. In view of experiences in the German case, a time frame of two to three years looks ambitious but feasible for the implementation.

Such an approach would offer more choice to larger customers in EU gas markets, as they could directly negotiate with the interested exporters, bypassing the import level, because the practicalities of bringing the gas from the entry point into the EU to such a customer would be granted by the coordinated TSOs. Russia (or other exporters, which have however not made such a strong point of it) would not enter into downstream transportation investment but get a clear commitment from EU TSOs to arrange for the transfer of the gas to the customers, eventually adding new capacity to existing infrastructure. In line with the current draft Target Model, capacity booking on a daily, monthly, quarterly, and annual basis for up to 15 years would be possible. Bottlenecks in the transmission system would have to be removed by joint actions of the TSOs, if necessary involving open seasons for the construction of new capacity along the routes that the TSO considers best. Of course, any exporter would ask for evidence that its request to deliver the gas to its customers can be fulfilled.

That approach offers Russia, like all other gas producers, a more tailor-made instrument for marketing its gas, still allowing for the balance of security of supply and security of demand by LTCs, but on a more differentiated basis, downstream of the import point. Classic LTCs at the import

level can still play their role, supplemented by direct deliveries to final customers. This would offer more flexibility for optimization of infrastructure on both sides. As the Russian gas market evolves to include more competitive elements, a joint gas space may develop by two markets linked like communicating tubes.

Conclusion

The EU will still need substantial volumes of gas for decades to come, albeit with more uncertainty linked to the volumes, in view of climate change policy and the fate of nuclear power. Given the complementarity of Russia's gas reserves and EU gas import needs, Russia continues to be a natural partner of the EU.

However, in a changing world with increasing competition, both sides have to look for new instruments that complement the traditional LTCs to ensure a fair balance of demand and supply for the foreseeable future. A major approach would be that EU TSOs take responsibility for coordinating and ensuring access for all gas exporters to all customers inside the EU, in line with their valid supply arrangements, thus also creating effective choice of external and internal EU suppliers for EU customers.

A major development toward a common energy space will stem from gas price increases in Russia to the netback level of export prices, which will make the need for higher efficiency in the energy sector ever more obvious. Accordingly, the real ground for cooperation will be paved by modernization and decarbonization of the energy sectors, with Germany taking a pioneering role. Such a cooperation should be based on shared objectives to tackle climate change by jointly developing technologies as well as sharing experiences as well as the necessary investment. Beyond cooperation along the gas chain, which in the past has involved a relatively small number of people, that approach offers more opportunities and a much broader possibility for engagement.

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