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Out of Gas

Looming Russian gas deficits demand readjustment of European energy policy

Alan Riley and Frank Umbach | **An imminent threat of significant gas shortfalls further jeopardizes Russia's status as a reliable energy partner. The supply gap that Gazprom faces has severe implications for European importers and EU energy policy in general. The European Union must diversify its natural gas imports and expand other energy sources—including nuclear power.**

EU heads of state and government are in the process of adopting an energy action plan that includes a common foreign policy on energy issues. Its goal is to allow the European Union to speak “with one voice” to its energy partners, above all to Russia. Since Putin and the *siloviki*, the former security officials who make up today's political and economic elite, regard energy and pipeline policy as the most important instrument of Russian foreign policy, the need for concerted action is greater than ever. Even after the Russian-Ukrainian gas conflict in January 2006, they have continued to use Russia's gas resources as a means to apply political pressure on Lithuania, Moldova, Georgia, and Belarus. Raising energy prices to “market levels” has always been a way to gain control of pipelines, refineries, and

additional energy infrastructure in Eurasia as well as to expand Russia's monopolies.

So far, the European Union has been unsuccessful in persuading Russia to pursue a market-oriented energy policy or in aligning the “EU-Russian energy partnership” with market principles. As a consequence, the European Union is now seeking, among other things, to diversify its energy imports in order to reduce its dependence on Russian energy, particularly natural gas. For its part, Russia's reputation as a reliable EU energy partner is undermined by the imminent threat of a dramatic gas shortfall—one that, until mid-2006, both Moscow and Gazprom's European energy partners denied could happen. Although Putin finally acknowledged this supply gap in do-



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mestic discussions in September 2006, he did not reveal its full scope, which is all-important for the European Union.

At first glance, supply shortages would seem an impossibility in Russia, which not only boasts over 47 billion cubic meters of natural gas reserves (26 percent of global reserves) but meets 50 percent of its own domestic energy demand. However, fears of a gas shortfall are well founded. Russian and foreign consumers are threatened by supply disruptions that will cast even greater doubt on Russia's reputation as a reliable energy supplier and permanently harm foreign gas sales, which are crucial for Russia's economic development and tax revenues.

There are two main reasons for the Russian gas crisis: 1) the decline

The Russian financial system is too weak to provide the necessary capital to tap vast gas reserves.

in output from the vast natural gas fields in the region of Nadym Pur Taz (NPT), and 2) an unwillingness on

the part of the state energy giant Gazprom to make timely investments in developing new fields. Although Gazprom has adequate capital, it has failed to develop any major new fields apart from the gas deposits in Zapolyarnoye, which can mitigate the effects of the NPT decline only for a short time. There are, in turn, seven reasons for this unwillingness to invest:

- Most of the natural gas extracted by Gazprom is not destined for the lucrative foreign market. It is sold on the Russian market at subsidized

prices that are considered far too low. This makes it considerably more difficult to invest in new fields and the required infrastructure.² While it is true that, by 2011, Russia plans to double the domestic price of gas to \$90 per 1,000 cubic meters, significant price increases are unlikely in the run-up to the March 2008 presidential elections.

- Despite high profits from foreign sales, the Gazprom Group has been saddled by heavy debt of \$38 billion ever since it took over Sibneft. Further, there is evidence to suggest that Gazprom's additional income is consumed by high operational costs.

- The Russian financial system is too weak to provide the necessary capital to tap vast gas reserves. The Yamal region in western Siberia, for instance, will cost a total of \$70 billion to develop. The decision by Gazprom executives to exploit the natural gas deposits in Schtokman without foreign partners will further increase strains on capital resources that are already at record levels.

- In the space of three years (2003–2006), Gazprom spent nearly 18 billion euros on stakes in companies outside the gas sector. It had the strong support of the Kremlin and was essentially acting in the Kremlin's interests (e.g. purchasing media companies so they could be subject to state control). Gazprom has pursued "policies targeted to increase the Russian state's influence in these sectors....This is more than had been invested in the development of upstream gas production in decade."¹ When Gazprom does make investments, these are focused on foreign ac-

1) Vladimir Milov, "The EU-Russia Energy Dialogue: Competition versus Monopolies," *Russie. Nei. Visions*, No. 13, September 2006, p. 8.

2) See Jonathan P. Stern, *The Future of Russian Gas and Gazprom*, Oxford 2006, p. 37.

quisitions (such as those in Central Asia) and export infrastructure, not on constructing and modernizing domestic pipelines or developing new natural gas fields.

- There may be a few individual foreign investors who are willing to invest billions in Russian deals under increasingly uncertain political conditions. But \$70 billion is a great deal more than most of the large energy corporations—even acting in a consortium—are willing to pay without stronger legal protection for investors' rights. Because economic circumstances have changed, the Russian government is now undermining production agreements that were signed in a period of low energy prices in the early 1990s, but its flaunting of contractual agreements will permanently

scare off investors in the future.

- Western investors are not permitted to hold more than 49 percent of a Russian company. This limitation is unlikely to dispel reservations or create an investment-friendly climate in Russia.

- Finally, direct foreign investment is largely unwelcome in Russia. In practice, Western shareholders of Russian energy companies must generally content themselves with small stakes.

Former deputy energy minister Vladimir Milov warns that this unwillingness to invest will have dire consequences—as shown by the table below.³

These figures are buttressed by the findings of the International Energy Agency (IEA), which estimates

| Russian Gas Productions and Deficits in billion cubic meters/bcm | | IP – GE |
|--|---------|-------------------|
| | 2004 | 2010 |
| Natural gas production of the Gazprom Group (a) | 545 | 550 |
| Gazprom exports to Europe / to GUS (b) | 191 | 312 |
| Deliveries to domestic consumers | 354 | 238 |
| Russia's domestic demand | 402 (d) | 469 (d) |
| Supply gap | 69 | 231 (d) / 202 (e) |
| Natural gas deliveries from Central Asia (f) | | 105 |
| Total supply gap | | 126 / 97 (e) |

(a) Optimistic estimates, without output from the Yamal deposits
 (b) Excluding exports to Asia
 (c) Including 200 bcm to Europe and 112 bcm to GUS
 (d) Possible scenario based on an annual growth of 4.3 percent
 (e) Possible scenario based on an annual decline of 2 percent
 (f) Best-case scenario

3) Vladimir Milov, Leonard Coburn, and Ingor Danchenko, "Russia's Energy Policy 1992-2005," *Eurasian Geography and Economics*, 47, 3 (2006), p. 305.

output will decline by 20 bcm per year.⁴ Based on current demand, this will result in a supply shortfall of 200 bcm by 2015. The Russian Institute of Natural Monopolies Research has arrived at similar figures.⁵ In its analysis, it put the annual shortfall at 120 to 123 bcm by 2010 and 186 to 343 bcm by 2020.

Reserve levels and available capital are already placing limits on gas-producing oil companies like Rosneft.

In early summer 2006, NIIgazkonomika—a gas industry research institute and a subsidiary of Gazprom—proposed that Gazprom radically change its strategy: Russia, it said, should reduce its natural gas exports to European markets and concentrate instead on developing new gas fields to satisfy domestic demand. This demand will grow to 654 bcm per year by 2020—a figure that dwarfs the estimates of 436 bcm per year in Russia's 2003 energy strategy.⁶

Milov's figures are optimistic. They are based on the assumption that Gazprom will be able to maintain gas production of about 550 bcm per year. There are two reasons that this is too optimistic: in the first place, the smaller NPT fields will be considerably more difficult to exploit, while it will take time to put the large Yamal plants into operation. Secondly, it is unclear whether the remaining NPT deposits can be extracted both efficiently and profitably. Output could be adversely affected by higher production costs or by damage resulting from overproduction in the Soviet age. In addition, one must also

question Gazprom's commercial strategy in Central Asia.

In view of the many unknowables and the lack of information, it is difficult to make an accurate prediction about the magnitude of the supply shortfall in 2010. However, Russia and the European Union can count themselves lucky if it does not exceed 126 bcm.

Russian Solutions

Russia sees two possible solutions. First, independent gas suppliers could partially close the supply gap if the Russian domestic market were made more attractive by raising prices. Russia's 2003 national energy strategy foresees independent companies covering roughly 20 percent of natural gas demand by 2020 (compared with 13 percent now). Based on its own projections, the IEA hopes that independent suppliers will account for 40 percent of the market in 2015—meaning deliveries of 260 to 290 bcm of natural gas. Even so, Novatek and TNK/BP are probably the only companies capable of making a substantial contribution. Reserve levels and available capital are already placing limits on gas-producing oil companies like Rosneft, which are also being lured by the prospect of greater profits in the oil business. This means that the more conservative approach in the 2003 national energy strategy, which envisions a contribution of 120 to 135 bcm, or perhaps even 150 bcm in 2015, is probably more realistic.

Moreover, the amount of gas con-

4) International Energy Agency, *Optimising Russian Natural Gas: Reform and Climate Policy* (2006), p. 34.

5) Freedholm, *Gazprom in Crisis* (Conflict Studies Research Centre, 2006), p. 11.

6) Energy Strategy of the Russian Federations until 2020, Moscow 2003.

tributed by independent companies will depend on their capital resources and on formal guarantees by Gazprom that they will be able to utilize its network. At the moment, both are highly questionable since they undermine the vision of a vertically integrated energy behemoth controlled by the Kremlin. In the future, independent companies are likely to face even greater restrictions in accessing Gazprom's network. The more quickly Gazprom depletes its own reserves, the more companies it will need to purchase to make up for its gas shortfall. In such a scenario, it is extremely doubtful that the weakened, once-independent companies taken over by Gazprom will be able to maintain their high production levels.

The second solution—one favored by Putin, but criticized by the economics minister German Gref and other experts—calls for replacing natural gas in the domestic market with hydroelectric, coal, and nuclear power. The utilities company UES currently generates about 40 percent of its electricity from natural gas. However, it seems doubtful that Russia can build the additionally required hydroelectric and nuclear plants quickly enough to close the supply gap. Further, in Gref's view, if gas prices are not heavily subsidized, the Russian economy will become even less competitive in international markets. Part of the supply gap could be filled by feeding energy from coal-fired plants into the grid, and the modernization of existing power stations could add additional capacity. Coal-fired power stations can generally be built more quickly than nuclear or hydroelectric plants

because they are less expensive and coal is readily available.

But Russia will also confront problems here, apart from the issue of carbon dioxide emissions. According to Milov, rigorous measures must be taken and extensive investments must be made in the next three years, before the shortfall assumes significant proportions. But none of these investments have been tackled so far, despite meetings at the Kremlin devoted to this issue. Moreover, experts regard the drastic expansion of coal use—favored by Putin—as unrealistic because it would cause insurmountable logistical problems in Russia extending all the way down to the end customer.

European Solutions

There are also two possible solutions at the European level to this looming crisis. The first is of an internal nature, the second entails building the proper framework

for an energy partnership with Russia. Internally, the European Union must liberalize its gas markets, develop a strategy to integrate the most important ones, and create transparent standards that will more effectively counter supply shortages. The European Union must also drastically expand gas stockpiling in its member states and work to diversify imports (including the construction of liquid gas terminals). Liberalization will at least unlock alternative sources for those countries that are most dependent on Russian natural gas, and it will also open up continental Europe to new gas sources,

The EU must drastically expand gas stockpiles and work to diversify imports.

most of which have been developed by Great Britain. In addition to the Norway pipeline, Great Britain now has more than three liquid natural gas (LNG) plants in Milford Haven and on the Isle of Grain. With the inflow of LNG from Qatar, the British gas market will generate substan-

Europe should insist that Russia open Gazprom pipelines to independent energy suppliers.

tial surpluses from 2008 onward. At that time, more than 30 bcm of natural gas could be transported to the continental market through the two lines across the channel. A liberalized energy market could provide access to natural gas from British plants, Algeria, and Libya, which would at least partially close the Russian supply gap.

The second European solution is to create a framework for granting foreign investors access to Russian plants, which would secure stable natural gas supplies. The European Union and Russia could include a section on energy sector cooperation in their Partnership and Cooperation Agreement, which is currently up for renegotiation. Up to now, the European Commission has had no direct power to act and has only been able to fall back on competition rules as well as regulations related to environmental policy and the EU single market. At the very least, the European Union needs to enter into negotiations with its member states in order to secure a mandate—but this would considerably delay a new agreement.

This is why the European Energy Charter Treaty represents a much more favorable starting point. In a

move that broke with previous political practice, Russia has already entered into commitments by signing the charter. It has expressly agreed to comply with the charter's provisions, even before the document is ratified. The charter also lays down strict regulations on investor protection—ones that give foreign investors the necessary guarantees that their investments in the energy sector will be safe. If the supply gap is to be closed, it is essential to safeguard foreign investment, since Russian capital and expertise are not sufficient to develop new gas fields or to modernize existing plants.

The European Union, as a collective, is in a much stronger bargaining position in energy relations with Russia than most people realize—particularly if it insists that Russia observe the Energy Charter. First of all, Russia does not have adequate capital to develop its natural gas deposits. Second, Russia is at a disadvantage because it must expend energies on solving these large shortfalls. Third, as the Gazprom Group's most important customer, the European Union represents the most important gas market for Russia. Fourth, the European Union could insist on clear reciprocity and threaten to close its own energy sector to Russian companies until all provisions of the Energy Charter are implemented and Russia opens its own markets.

Finally, the European Union should insist that Russia sign the Energy Charter's Transit Protocol, which would open Gazprom pipelines to independent energy suppliers and provide them with an incentive not only to expand their busi-

ness transactions, but also to raise capital and sell natural gas in the domestic and foreign markets. All this presupposes that the European Union will speak to Russia “with one voice” in the future.

Consequences of Supply Shortfalls

Out of pure self-interest, both sides—Russia and the European Union—should adopt measures to avert the imminent supply gap. This is an area where Russia is especially vulnerable: if natural gas exports were stopped and Russia nonetheless continued to subsidize domestic consumption, it would face lower foreign profits and a shrinking tax base, since Gazprom alone accounts for nearly 20 percent of state tax revenues. Since the Russian energy sector, together with those in Uzbekistan and Kazakhstan, is among the least efficient in the world, supply shortfalls could have a devastating impact on industry. Exacerbating the situation is the fact that crude oil, minerals, and metals are Russia’s most important foreign currency earners alongside natural gas, and it is dependent on natural gas or on the electricity generated by it to produce them. For Russia, severe supply shortfalls pose an enormous threat that could set it on a downward spiral, not only eroding the legitimacy of the Russian state but also erasing the economic gains made since 1999.

Most of the states in Central and Eastern Europe also depend on natural gas from Russia. Ongoing supply shortfalls and the resulting high energy costs could seriously harm many national economies in the region.

Shortfalls could also delay these states’ admission into Euroland and put the brakes on economic growth. Even those western EU states that do not directly depend on Russian natural gas would not escape unscathed because supply shortages in eastern and southern Europe would likely lead to higher energy prices throughout the European Union.

However, from both a European and a strategic, economic standpoint, it is Germany, not Central or Eastern Europe, that faces the gravest threat. Severe supply shortfalls could send Russia into a dramatic downward spiral. Dramatic reductions in natural gas deliveries could cause tremendous turbulence in the German economy. Due to the country’s size, these could spread to all of Europe. The situation is even more precarious for Germany because the shortfalls are likely to occur long before the Baltic Sea pipeline (Nord Stream) launched by ex-chancellor Schröder is connected to the network. Any shortfalls would hit the western EU states first and hardest, despite contractual agreements. This is especially true of Germany: as the largest European investor in Russia it would face lower and uncertain natural gas deliveries, and it would have reason to fear that its foreign investments in Russia would decline in value since any such shortfalls would cause the Russian economy to contract.

The prospect of such shortfalls in natural gas delivery to Germany underscores the danger of pursuing a bilateral *Sonderweg* with Russia within the European Union. The Baltic Sea pipeline could prove to be a strategic

mistake for Germany: on the one hand, the pipeline means increased dependence on Russian natural gas (which, when the pipeline is completed, will account for 60 percent of all gas imports, as compared to 42 percent in 2006). On the other hand, Germany has failed to persuade Russia to liberalize its energy markets. It has not secured the free flow of capital or the protection of foreign investors' property rights, both of which are necessary to ensure the availability and supply of natural gas.

Sleepwalking Toward a Crisis

The prospect of a serious gas shortfall, combined with the opaqueness of Russian energy policy, should be a wakeup call for policymakers in Russia and Europe. It should spur them to take relevant countermeasures instead of uncritically trusting the Kremlin's assurances. Many of these measures could be implemented unilaterally, but the most effective solution would be to establish a solid set of contractual regulations with Moscow that would allow capital to be deployed to modernize infrastructure, deve-

lop new fields, and safeguard natural gas flows. Yet this would require the Russians to completely reverse the energy policy they have been pursuing over the past few years, which is highly unlikely in the foreseeable future. Irrespective of the Russian gas shortfall, the European Union needs to broadly diversify its natural gas imports. Russia's overly optimistic energy strategy of 2003 has already been rendered obsolete by the increase in domestic gas consumption. But even if Russia manages to export as much gas as originally projected in the plan (274 bcm per year by 2030), exports would still fall far short of meeting total EU requirements of 490 bcm per year by 2040 (280 bcm in 2004). The bottom line is that the demand for gas imports in the European Union cannot be met by Russia alone. The EU requires additional imports from other countries and regions, stepped-up efforts to improve energy efficiency, and the expansion of other energy sources to reduce gas consumption—including nuclear energy and an extension of nuclear power plant lifespans in Germany.