

Summary: The deterioration of the relations between the EU and Russia, caused by tensions over Russia's annexation of Crimea and Moscow's active support of the separatist movement in eastern Ukraine, requires a rethinking of EU- Russian energy ties. In particular, the EU should diversify its natural gas imports away from Russian sources. Although costly, a sharp reduction in imports of Russian natural gas is quite feasible. By improving energy efficiency, ramping up EU natural gas production, and increasing imports of liquefied natural gas, the EU can make meaningful progress towards greater energy independence. The economic costs of this transition can be tolerated because greater energy independence guarantees that in the future, Moscow will pose less of a political and military challenge to the EU and to all European-minded nations.

Can Europe Survive Without Russia's Natural Gas? Part II: More Expensive, but the Right Way Forward

by *Vladislav L. Inozemtsev*

EU-Russian cooperation in the energy sector has a long history, going back to the times preceding the existence of both the current European Union and the current Russian Federation. The first significant oil supplies from the Soviet Union to Europe started with the completion of Druzhba (Friendship) pipeline back in 1966; the first major natural gas deliveries started in 1979, when the Orenburg (on USSR's Western border) pipeline became fully operational. Despite periods marked by political tensions, the scope of cooperation only expanded; even the collapse of the USSR did not have a major impact. Today, Russia and Europe are bound together by a system of pipelines capable of transporting 196 million tons of oil and 257 billion cubic meters (bcm) of natural gas a year. Russia is by far the biggest foreign supplier of both oil (153.9 million tons in 2013) and natural gas (138.7 bcm in 2013)¹ to the EU. This, of course, strengthens the economic ties between the parties, but at the same time makes both

vulnerable to non-economic tensions and disagreements.

Energy cooperation between Russia and the EU is defined by oil and gas trade, which are clearly different in their manner. The volume of trade in both coal and electricity is negligible and will not be addressed here. Petroleum and petroleum products (which in the first through third quarters of 2014 were 55.4 percent of overall Russia's exports by value² and 62.9 percent of energy supplies from Russia to the EU³) are produced and manufactured in Russia by a number of independent companies, both private and public; they are delivered both through pipelines not controlled by any of the producing companies, and by maritime and railway transport; prices are set according to current market conditions and are subject to change. At the same time, natural gas (which represents 12.2 percent of all of Russia's exports by value² and 30.7 percent

1 According to www.oilru.com (Oil of Russia), www.oilru.com/news/394638.

2 Data of oil, oil products, and natural gas' share in Russia's exports according to Russia's state Customs Committee, www.customs.ru/index2.php?option=com_content&view=article&id=20260&Itemid=1978.

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of energy supplies from Russia to the EU³) is sold abroad by the Russian state monopoly, *Gazprom*. Natural gas is transported exclusively through pipelines that the same company builds, owns, and controls, which contradicts the requirements of the EU's Third Energy Package. Gas prices are determined through individual negotiations, are stated in fixed-term contracts and depend on a number of specific factors rarely made public. The full scope of the differences between oil and gas trade is shown by the fact that the EU and Russia have never once experienced a problem with the supply of oil while natural gas issues fueled acute conflicts at least three times (in 2006, 2009, and 2014).

The sharp (and apparently long-term) deterioration of relations between the EU and Russia, provoked by Russia's annexation of Crimea and Moscow's active support of the separatist movement in eastern Ukraine, requires a rethink of the prospect of Europe's complete "energy independence" from Russia — and first of all in natural gas supplies. There are at least three factors making this task particularly significant right now. First, a sharp reduction of Russian gas supply can lead to serious disruptions in the European economy. One should note that supply disruptions would hurt Russia even more, making it seem an unlikely response. However, President Vladimir Putin, as Chancellor Angela Merkel correctly noted, "lives in another world" and may make unpredictable moves. Second, much of Central Europe has no alternatives to natural gas supplies from Russia, which makes it more vulnerable to Russian energy blackmail (and sometimes even forces Central European governments to bluntly support Moscow's policies). Third, the current logistics of natural gas supply involve pumping large volumes of fuel through Ukraine, which seriously limits European support for Kyiv in fighting both for its sovereignty and for regaining control over the eastern regions of the country. Under such circumstances, the EU badly needs natural gas independence from Russia.

Energy independence from Russia has been debated in Europe for many years, but little has been done to achieve it. Gas imports from Russia actually rose from 117 bcm in 1994 to all-time high of 138.7 bcm in 2013. After the first conflict over gas supplies via Ukraine in 2006, the issue

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became a top priority, but subsequent moves by Europe were rather disappointing: between 2010 and 2012, the North Stream pipeline, which is able to supply Russian natural gas directly to Germany, was built in the Baltic Sea despite considerable opposition from a number of neighboring nations. Beginning from 2010, there has been an ongoing debate regarding constructing another pipeline, South Stream, which would allow Balkan and Central European countries to receive natural gas supplies from Russia, bypassing Ukrainian territory. After facing numerous difficulties with several European partners and the European Commission, Russia announced the termination of the deal on December 1, 2014. Russia's new plan is to change the route and pump additional volumes of gas to Turkey, and from there to Greece, which, according to Moscow's plans, may become Russia's Euroskeptic ally inside the EU. All these "alternatives" did not limit Russia's share of Europe's natural gas supply, but rather provided alternative transportation routes. Today there is significant talk in Europe about green energy projects, but these can be realized only gradually. Therefore they should not be counted on as an effective means of replacing Russian natural gas in any short-term perspective. Moreover, green projects may even damage Europe's position vis-à-vis Russia if they lead to the shutdown of nuclear power plants in Germany, as this may enlarge European demand for Russian fossil fuels.

Frankly speaking, one should admit that Europe cannot abandon Russian gas supplies if acting purely with economic interests in mind. There is no cheap alternative both to this type of fuel and to this source. Therefore Putin is now putting forward financial incentives to seduce Europeans into cooperating with Russia in exchange for "giving up" on Ukraine. Natural gas has long been a weapon in the Kremlin's hands, and Europe's choice looks clear: either surrender politically to Putin while securing some finan-

3 Share of oil, oil products, and natural gas' in Russia's exports to the EU calculated on the basis of the data by Russia's state Customs Committee, www.customs.ru/index2.php?option=com_content&view=article&id=20261&Itemid=1976.

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cial gains (or rather not incurring additional costs), or stay firm and try (of course, with certain expenses) to repel Moscow's attack.

I would argue with all certainty that the choice here remains exclusively with the European Union and its member states. No one can or may force Europeans to adopt one or another option. My sole purpose in this brief is to convince Europeans that a scenario of hard response to Moscow remains quite feasible, and Europe has a good chance of countering Russia's natural gas blackmail in diverse ways.

One must take two premises for granted: first, that the natural gas problem has already become a political issue for Europe, which entails a willingness to take on certain economic sacrifices (without this, the debate over energy geopolitics itself makes no sense). Second, that achieving gas independence from Moscow cannot be so narrowly defined as closing the valves on all pipelines but, rather, when Gazprom turns into an ordinary supplier, whose prices are determined by market conditions and cooperation with whom may be stopped by every single EU country in case energy supply issues became politicized. It should be added that the change in Europe's stance will be effective only if Russia believes that Europe can rapidly diversify away from its gas. Precisely because of this, one should not focus on the long-term increase of renewables in the EU energy mix nor hope for shale gas deliveries from the United States or the expansion of local production in the EU.

The question is whether the EU can sharply decrease its dependence on Russia in one to three years. It may seem that it cannot. In 2013, the EU imported 138.7 bcm of natural gas from Russia (which was 27.0 percent of the EU's overall gas consumption and 40.9 percent of gas imports). Norway provided 31.8 percent of imports, and the third and fourth largest suppliers, Algeria and Qatar provided 11.1 percent and 7.6 percent.⁴ On first blush, it seems necessary to replace the giant supplies. Moreover, it is often noted that Russia's share of natural gas imports to 11 of the 28 EU member states (Poland, Czech Republic, Austria, Slovenia, Slovakia, Hungary, Bulgaria, Finland, and the three Baltic states) varies from 55 up to 100 percent, which

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simply cannot be altered. However, upon closer inspection, the situation is not so hopeless.

To abandon Russian supplies completely, Europe needs to economize and/or replace 125-135 bcm of gas a year. It may reduce its annual consumption by 35-45 bcm and obtain 80-100 bcm from alternative sources. The topic of gas supplies to Central European consumers will be discussed separately.

Europe in recent years has made obvious progress in energy efficiency. Today the EU, on average, consumes 0.117 kilogram of oil equivalent (koe) for every \$1 of its GDP (in 2005 constant dollars), whereas in 1990 the figure exceeded 0.159 koe. The overall energy efficiency of the European economy is 2.83 times higher than that of Russia and is 3.38 times higher than that of Ukraine.⁵ The continuation of this trend may have a positive effect, but it is definitely not enough. In 2013, EU nations consumed 461.2 bcm of natural gas (and the share of natural gas in Europe's energy mix reached 23.1 percent⁶) — with around 34.2 percent of it used for producing electricity, 20.3 percent in the industrial sector, and roughly 35 percent used for residential heating.⁷

If harsh economizing becomes the goal, the main emphasis should be made on increasing the use of oil or even coal for electricity generation. This can easily save up to 15 percent of total industrial gas consumption, or 19-22 bcm. Also a

⁵ Calculated on the base of data provided by Enerdata Information Services, www.yearbook.enerdata.net/#energy-intensity-GDP-by-region.html.

⁶ According to *Eurogas Statistical Report 2014*, pp. 1, 6.

⁷ See *The Outlook for Natural Gas Demand in Europe June 2014*, Oxford: The Oxford Institute for Energy Studies, 2014, p. 15.

⁴ According to *Eurogas Statistical Report 2014*, Brussels: Eurogas, 2014, p. 6.

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decrease in use of gas for heating by 5-6 percent can release up to 10 bcm while causing a largely symbolic drop of temperature in houses and apartments by 1.0-1.5 C° during the winter.⁸ This may not be pleasant, but this temperature difference obviously is not critical. It just depends on what is at stake, I would say. Thus, economizing up to 30 bcm of natural gas per year may be achieved quite quickly — even in a year or two. At the same time, the European Commission might approve a series of directives implementing additional energy-saving measures that could compensate consumers for the aforementioned cuts in another three to five years.

But a comprehensive program of genuine supply diversification should become more important; it could aim to substitute Russian gas with supplies from other sources. The Kremlin blackmails Europe, believing that Europeans have no real alternative to the supply from the east. One needs to emphasize that many European politicians back this thesis in numerous speeches citing the enormous importance of Russia as the guarantor of Europe's energy security. Meanwhile, there are additional capacities for gas production both in and around Europe and there already is a long-established alternative system for natural gas deliveries via liquefied natural gas (LNG) terminals.

We will start with the traditional sources: Norway, the Netherlands, and both Eastern Mediterranean and domestic production in the Balkans. In 2013, the Norwegian pipeline network had capacity to pump up to 122 bcm of gas per year but was only utilized at a rate of slightly more than 85 percent (the actual supply stood at 101.5 bcm). The additional capacity could reach 15-17, if not 20, bcm per year — and Norwegian imports are preferable not only because their source is so close to continental Europe, but also because the price of Norwegian natural gas is very close to the cost of Russian supplies. Another source may be found in the Netherlands, if the Dutch revisit their laws now preventing new drilling at the Groningen field, which has capacity of producing around 60 bcm of gas per year; the output in 2014 was less than 43 bcm due to a swarm of minor earthquakes in 2010-2012. With some additional investments into production safety, the Groningen field could increase production by at least 10 bcm by 2016, and other Dutch fields may contribute additional 3 to 5 bcm

⁸ See Zachman, Georg. *Can Europe survive without Russian gas?* The Bruegel Institute, www.bruegel.org/nc/blog/detail/article/1283-can-europe-survive-without-russian-gas.

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per year. One may also consider new developments of fields off the coast of Israel, where the Tamar field will become fully operational in 2016. Moreover, newly discovered fields in Croatia, Romania, and even Bulgaria may add 15 to 20 bcm to EU domestic production by 2017. All of these efforts may provide the EU with at least 40 bcm of gas in two to three years, thus allowing the EU to decrease its overall dependence from Russia by 80 bcm of gas per year.

The remaining shortfall of up to 50-60 bcm annually could be covered by LNG supplies. Europe has significant experience using this type of fuel. The first LNG carrier, the *Methane Pioneer*, arrived in Britain from the United States to Britain in 1959, and LNG from Algeria first was utilized in France in 1967, a decade before supplies from the Soviet Union arrived in Europe. Over the past decades, the capacity of regasification terminals in Europe grew exponentially from 38 bcm back in 1990 to 79 bcm in 2002 and up to 182 bcm in early 2014.⁹ Additional facilities capable of handling 35 bcm of gas annually will become operational by 2017. Some of the terminals are being constructed in energy-poor Central and Eastern European countries, as is the case with the Klaipėdos Nafta in Lithuania, which became operational on Dec. 3, 2014. This terminal alone may process up to 3 bcm of gas annually,¹⁰ which covers approximately three-quarters of the current consumption of the three Baltic countries, which are completely dependent on gas from Gazprom.

Technically, the European Union may already have the diversification and import capacity to be completely independent from Russia in natural gas supplies, but until now, the Europeans have clearly preferred cheap pipeline gas to more expensive liquefied gas. LNG imports to the

⁹ For data on 1990 and 2002 see *LNG in Europe: An Overview of European Import Terminals*, London: King & Spalding, 2006; for 2014: "Conscious uncoupling" in *The Economist*, 2014, April 5, p. 18.

¹⁰ As noted at the facility's official web-site, www.sgd.lt/index.php?id=spec&L=1.

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EU peaked at 86.5 bcm in 2011 and decreased to 45.7 bcm in 2013,¹¹ which corresponds to fewer than 14 percent of EU's overall imports. Europe's possession of more than 140 bcm of excess regasification capacity makes the substitution of Gazprom's supplies not a technical, but rather only a financial issue.

The costs of switching seem to be quite high. Europe will have to pay a price to attract huge flows of LNG from other markets. Whereas Gazprom charged an average of \$385/tcm in 2013, the price for LNG in Japan and Korea was around \$710/tcm. Moreover, there was a clear shortage of LNG that could be diverted to European markets. Before the current dip in oil prices, it was believed that it would take four to six years for Russian supplies to China and new exploration in Indonesia and Australia to ease the demand in East Asia. But these days, both the change in the world energy markets and geopolitical rivalry may help the Europeans. First of all, there are obvious (and growing) tensions between Russia and Qatar, the world's fourth natural gas producer. Back in 2012, Russia's envoy to the UN, Vitaly Churkin, famously told Qatari Foreign Minister Sheikh Hamad Bin Yassim Bin Jabr that if he speaks with Russia as he has been, "there won't be something called Qatar from today."¹² Because Qatar produces 158.5 bcm of natural gas annually¹³ and exports more than 67 percent of this to Asia, the idea of switching part of it to Europe to substitute for Russian gas looks not altogether fantastic. If Europe succeeds in getting only one-half of Qatari LNG exports, its full gas independence on Russia will be achieved. And Europe may also purchase gas from other suppliers, such as Nigeria or Trinidad. This by switching to LNG, the European Union would become independent from Russia's natural gas supplies.

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11 See: "Conscious uncoupling" in *The Economist*, 2014, April 5, p. 19.

12 As quoted in www.sultanalqassemi.blogspot.com/2012/02/russias-un-envoy-threatens-to-wipe.html.

13 See *BP Statistical Review of World Energy June 2014*, London: British Petroleum Plc., 2014, p. 22.

However, the cost of independence from Russian gas is significant. The LNG "surcharge," if multiplied by 60 bcm, will be no less than \$15 billion a year, the additional costs for gas supplied from Norway and the Netherlands will come up to another \$2-3 billion, and compensation to the industrial sector for transitioning to other fuels would add another \$5 billion. So Europe should prepare to pay an additional \$23-25 (€20) billion a year for its "energy liberty," or roughly 40 percent of the price it now pays Russia for its gas deliveries. Of course, these costs are huge, but they account for less than 0.15 percent of EU28-combined GDP, and therefore, I believe, seem to be quite affordable.

But there are two more points to consider, one challenging, the other comforting. The first is the two-fold difficulty in dealing with Russia: the termination of all take-or-pay contracts with Gazprom and supplying gas to Central Europe and (presumably) Ukraine. The second point is the changing situation in global energy markets at a time of challenging developments in the European economy.

The Russians have relied on take-or-pay long-term schemes since the Soviet times, but all these contracts have been renegotiated. In the period from January 2011 until October 2014, 33 Gazprom contracts with EU consumers were revised, giving the buyers an average 16 percent discount.¹⁴ So even though the EU receives up to 115 bcm of natural gas annually from Russia through these take-or-pay rules, these contracts should not be considered eternal or unchangeable.

Infrastructure challenges also loom large, because for decades, Central and Eastern Europe has been supplied only with natural gas coming from the east. In this part of Europe, there are no significant pipelines going along a "north-south axis," only pipelines running east to west. All the major north-south pipelines cross Europe to the west of an imaginary line leading from Hamburg to Munich and then to Venice. In Central European nations, 62 bcm of natural gas is consumed annually, of which 38 bcm comes from Russia. In fact, this is the EU's main problem today. In the long run, the EU may construct a number of large LNG regasification terminals on the Baltic and Adriatic coasts,

14 See Менеджеры "Газпрома" не читали учебников по экономике (in Russian), www.vgii.ru/2015/01/03/menedzhery-gazproma-ne-chitali-uchebnikov-po-ekonomike-porapriznavat-oshibki/.

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and may build a huge two-way pipeline from Montenegro and Serbia through Romania, Hungary, and the Czech Republic to Poland. Such a project is many times more important for European energy security than South Stream, and it may be significantly cheaper than the Russia-lobbied project. In the short term, a reverse supply of gas from Italy and Germany could deliver gas to Poland and other Central European countries. Such a project will reportedly require five to ten months to be implemented. At the same time, one should think about expanding the capacity of underground gas storage, which should provide at least a six-month reserve of EU overall consumption (currently the capacity for underground storage ranges from 76 to 80 bcm, which is obviously not enough). However, even the existing storage should be completely filled before the next winter arrives (usually, they are used at 40 to 55 percent capacity). By the most conservative estimates, the cost of building a new “north-south” gas pipeline and the development of additional storage facilities in Central Europe would require \$8 to \$12 billion, but, in contrast to the previously mentioned expenses, this investment is required only once. To conclude financial calculations, it can be argued that eliminating gas dependence on Russia will cost the European Union 0.2-0.25 percent of its GDP in the first most difficult years and around 0.15 percent of GDP in the later ones, with some opportunity to reduce this to 0.1 percent of GDP in the more distant future (or not more than €90 annually for every adult EU citizen).

It should be noted, however, that all these calculations are made based on 2013 market conditions. Considering the current downturn in oil prices, one could imagine that the price of natural gas will follow suit starting from the summer of 2015. In this case, it could be that substituting the pipeline gas from Russia with LNG from alternative suppliers will actually impose no additional costs on European consumers. By changing suppliers, Europeans will overcome their energy dependence on Russia and only lose limited opportunities to economize on falling natural gas prices, but they would not pay a significant surcharge as they would have under 2013 market conditions.

Of course, all the above represents the most radical scenario that will deliver a blow to both Russia’s economy and send the strongest political message. Despite the fact Gazprom ships just 28.4 percent of all the gas it produces to the EU (138.7 bcm out of 488.4 bcm of its overall produc-

tion in 2013), it provides the Russian monopoly with 2.1 times more revenues than its domestic sales.¹⁵ The EU’s refusal to buy Russian gas would deprive Gazprom of 64.4 percent of its export revenues, turn it into a loss-making corporation and force it to mothball at least one-third of its wells and a great portion of its pumping and compression stations. These days, Gazprom is simply unable to diversify. Its pipelines to China will not become operational until 2020-2022; the domestic market was serviced with zero profits even before the ruble devaluation that has been ongoing since October 2014, and it will not turn into money-losing adventure; lastly, the unfolding economic crisis will add the decline of demand from the heavy industries to the already bleak picture. The Russian gas giant, once considered a “national treasure,” will — with its 460,000-strong workforce spread across the country — turn into one of the biggest headaches for the Russian government.

But, of course, no one is calling for such a radical shift. There is no need for the complete abandonment of gas supplies from Russia. Europeans must only force Gazprom to forget about its arrogance. For this, several clear steps are enough. First, the EU must approve a new plan for natural gas purchases for the next three years, reducing supplies from Russia by at least 20 bcm per year — and it must actu-

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ally start such reductions. In this case, Russia will be forced to give significant price discounts (such as the one offered by Gazprom to Lithuania even before its LNG terminal became operational). Secondly, it should be clearly stated that the EU intends to reduce the share of gas purchased from Russia, and therefore no Russian gas will be bought from Turkey if it goes there through the pipeline that Putin recently announced. At the same time, the construction of a gas pipeline linking the countries of Central Europe to

15 Calculated on the base of the official figures for 2013 from Отчёт руководства ОАО “Газпром” за 2013 год, Москва: “Газпром,” 2014, сс. 17-18 (in Russian), www.gazprom.ru/f/posts/23/320736/2013-mgt-report-ru.pdf.

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the Adriatic and Baltic coasts should be started. Thirdly, the EU should increase gas purchases from alternative suppliers, firstly of LNG from Qatar, the Middle East gas producer that is least friendly to Russia. By reducing supplies from Russia to less than 20 percent of its total gas imports, the European Union may dramatically change the balance of power between the west and the east of the European continent. These measures must be launched as soon as possible since the current winter remains mild in Europe and from April onwards the EU may easily survive without Russian gas. A program to at least halve natural gas dependence on Russia must be implemented no later than this spring, because only in this way will Moscow feel the effects of the policy before is able to shift some of its natural gas deliveries to Asia.

Over the past few decades, Europe has lacked a clear strategy vis-à-vis Russia, preferring to treat it not as a dangerous geopolitical rival, but as a potential economic partner. In my opinion, the time has come to reconsider this approach. I am not saying that Europeans should seek a conflict with Moscow — but they have to do everything they can to stop the ongoing economic blackmail. During his long tenure, Putin has orchestrated a brilliant exchange of political freedoms of his loyal subjects for their relative economic well-being. Europeans should stand up for their values. The EU economy is threatened not so much by excessive natural gas prices, but by unsettled consequences of the financial crisis, by the instability in the eurozone, by unfolding deflation, and much more. An economic confrontation with Russia over energy can be tolerated because it is a kind of guarantee that in the future Moscow will pose smaller political and military challenges both to the EU and to all European-minded nations.

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