

## US shale revolution and Russia: shifting geopolitics of energy in Europe and Asia

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**Abstract** Increased shale gas and shale oil production in the USA will affect global geopolitics and national security considerations. An influx of Qatari LNG into Europe and Asia, which is diverted from the USA, erodes the tremendous market share held by the Russian gas company Gazprom and significantly reduces its pricing power. The USA did not begin to import the quantities of LNG from countries like Qatar and Trinidad and Tobago. Those quantities have instead been redirected to other markets, including Europe. As part of the impact of the US shale revolution, Russian energy control over Europe will be greatly reduced. Russia's power over the region will also be reduced. Russia has earned from US\$42 billion to US\$60 billion per year from selling gas to Europe. Fewer exports and lower prices will cut those revenues. Given the importance of oil and gas companies to Russia's economics, it is urgent for Moscow to restrict Central Asian production and infrastructure to mainly or even exclusively Russian channels lest Russian oil and gas become less competitive due to its own high cost and wasteful monopolistic structure and dilapidated infrastructure.

Much has been written about energy market changes of shale revolution. More recent studies tend to address geopolitical and national security considerations of shale revolution. Many analysts foresee a shift in global oil-market power from the traditional producers (OPEC, Russia) to consumers (such as Germany, Eastern

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Europe, China and India) that will benefit from the more diverse oil and gas supply. Asia accounts for 60 % of global LNG imports and will also be the fastest-growing LNG market in coming years. There will be increased production from new players such as the USA and Canada. By becoming an exporter, the USA would fill a vital role for its allies in Europe and Asia. Russian gas exports face serious challenges from weak gas demand in Europe, the rise of more flexible European gas pricing systems, the unconventional gas boom in North America, and China's aggressive hunt for alternative gas supplies. Could the shale revolution shake up the mighty Russian energy empire? This paper examines how the geopolitics of shale revolution plays out differently in Europe and Asia. In Europe, the US shale gas revolution is already undermining Russia's negotiating position relative to its European neighbors, although dramatic diversification away from Russian supplies is not expected in the short term. Asia seems bound for a natural gas shakeup pitting the USA against Russia. A critical mass of USA and Russian gas exports seems to be destined for Asia over the coming decade and beyond, much of it likely to be priced at a substantial discount to the liquefied natural gas (LNG) currently on sale in the region. The first section of the paper reviews the current state of US shale revolution and its potential impact on the global natural gas/LNG market. The second section looks into the gas market shakeup in Europe and Russia's response. The third section examines Russia's turn to Asia for diversification of export markets.

### **US shale revolution and changes in the global natural gas/LNG market**

At the time of writing (September 2014), there are growing expectations that potential barriers to further shale gas production in the USA will be largely overcome and the increased supplies become available. US shale gas production has continued to grow, and domestic natural gas seems abundant. Total recoverable shale gas resources in the USA are estimated at 20 tcm (trillion cubic meters). US production of natural gas increased 25 % from 2000 to 2012 (Neff and LaRose 2013, p. 335). US dry natural gas production will increase from 23.0 tcf in 2011 to 33.1 tcf in 2040 (Neff and LaRose 2013, p. 335). The Energy Information Administration (EIA) projects that it will account for 46 % of US gas supply by 2035 (Stevens 2012, p. 1; Stevens 2010). Shale gas production is projected to grow from 7.9 tcf in 2011 to 16.7 tcf in 2040 (Neff and LaRose 2013, p. 335).

Perhaps one of the most hotly debated issues is whether US LNG exports will become a reality and the potential impact on domestic prices of natural gas will hinder US LNG exports. Concerns about the effect of US LNG exports on the domestic price of natural gas began to mount in 2011 and 2012. Currently, numerous companies in the USA and Canada are taking advantage of the arbitrage opportunity resulting from the current supply overhang of shale gas and the price differentials ("shale spreads") between global gas markets. This means that as US shale gas exports increase, most of them will probably go to Asia where prices are higher. In turn, that will free other suppliers of gas to redirect flows to Europe, thus bringing down the need for gas imports from Russia. In addition, new sources of gas from new suppliers will also start moving to market.

Initially, there was much skepticism about the prospects of US LNG exports. More recent studies have indicated that the prospects for US LNG exports are now much brighter due to strong Asian demand and a widening of “shale spreads.” Oil and gas companies have applied for new liquefied natural gas export licenses with the US government in order to profit from the price disparity between the US and foreign natural gas prices. Currently, the government is considering permit applications that total 20 bcf/d, which if approved would make the US the largest natural gas exporter in the world.

America will be an LNG export competitor with Qatar, Australia, Mozambique, and Russia. The key growth market is Asia. Natural gas trade in Asia is in the form of LNG. Supplies to Asia will be under lucrative oil-indexed contracts. Russia and the Middle East retain the largest conventional natural gas reserves. Russia in particular possesses a vast potential for expanding and developing its conventional reserves. Qatar is becoming a crucial swing player feeding European and Asian markets. Qatar’s strategy is to keep feeding European spot markets as a transitional step towards far higher markets in Asia. The future penetration of US LNG into Asia and Europe will depend on regional differences in conventional gas production and export terminal project costs.

Although there are still divergent views about the role of natural gas, the universal support for natural gas is significant. The natural gas market’s evolution and stability will shape global economics and geopolitics. Natural gas has the potential to capture 30 % of the world’s total primary energy supply by 2025, rising further to 35 % by 2035. Today’s share of fossil fuels in the global energy mix is 82 %. The strong rise of renewables only reduces this to around 75 % in 2035. Conventional gas currently dominates worldwide natural gas production, accounting for 85 % of total marketed output today. The share of unconventional gas will account for 30 % by 2035. There has been ample evidence that LNG is changing the characteristics of global gas markets. LNG will represent 14 % of global gas consumption by 2020, up from 9 % in 2010. Global LNG capacity will increase by 61 % by 2020. Thanks to shale revolution, North America will be a net gas exporter by 2015 and could become a net oil exporter by 2035. In terms of the impact of shale gas on LNG markets, over the long run, increased production of global shale gas will strengthen the global LNG markets as increased shale gas production will lead to a further shifting of demand to natural gas. The sizable increase in shale gas production in the USA alone has already impacted the global LNG market. Two thirds of the world’s gas is still consumed in the country where it is produced. Increased shale gas production around the world could further increase LNG trading as more suppliers and buyers enter the market and the LNG market becomes more liquid. According to the Economist (2012):

“Given the vast global shale gas resource base, the shale-gas boom in America, and the potential for similar bonanzas around the world, is turning a seller’s market into a buyer’s paradise, promising deep and liquid markets with a growing diversity of supplies that improves security for buyers.”

## Russia and geopolitics of shale revolution in Europe

We need to consider the overall strategic environment in Europe as we ponder the issue of whether exporting US shale and LNG to either Europe or Asia is both economically and politically feasible as a means of striking at Russia in reply for the invasion, occupation, and annexation of Crimea.

Russia wants Europe to rescue its energy sector from the trap it has fallen into due to the global recession and its combination of depressed demand and prices for gas and simply accept Russian dominance of supply routes of gas to Europe. Stanislav Tsygankov, Head of Gazprom's International Business Department, told a foreign affairs roundtable in Moscow that:

“The Energy Summit held in Sofia in April (2009) was a kind of touchstone that revealed the true position of the European Union in these issues. Whereby keeping in mind the latest events; we no longer find general words sufficient with respect to Gazprom's efforts to diversify natural gas delivery routes to Europe. We expect unequivocal support of specific projects from the EU, primarily at the practical implementation stage of the North Stream project, as well as the planned South Stream gas pipeline. If Europe is truly concerned about its energy security, it should understand that the only way to ensure it is to diversify the gas delivery routes, thus balancing out the significance of each of them” (Tsygankov 2009, p. 81).

Former Finance Minister Kudrin has warned that if the price of oil goes below \$120, a barrel Russia's budget will be in deficit:

“Bearing in mind the current economic situation, problems for us start once it goes below 100 dollars. We would already experience a shock under 80 dollars. The state would be forced to cut expenditures sharply and this will impact on the economy for a second time. We boosted expenditures in 2008 and lightened the force of the crisis. But after a new shock will be forced to reduce them, we won't have our own resources and resources won't be provided to us on the global level. We will only be able to get by with our own resources for a year. If the decrease in oil prices is less (we will have) 2 years,” Kudrin said (Johnson's Russia List (2012).

Kudrin further warned that: “For Russia's current model of economic growth to work, oil prices need to grow by \$20 to \$30 annually” (Rostovsky 2013). As a result of the increasingly crippling sanctions upon Russia due to its invasion of Ukraine and the falling price of oil in the global market due to slackening demand, the pressure on the Russian economy will only grow. Not only is Russia expected to fall into recession, the government is already raiding the Russian pension system to pay for current expenses like the administration of Crimea (Bershidsky, June 26, 2014).

Moscow's demands on Europe regarding energy are quite simple, essentially amounting to giving it a free hand to decide how it will supply gas and allowing it to dominate European gas supply (Bershidsky, June 26, 2014, pp. 78–82). Moscow wants the EU to include the South Stream pipeline as one of its priority projects and thereby

prevent any other rival pipeline like the Nabucco pipeline from coming into being (Moscow, *ITAR-TASS*, in Russian, May 19, 2009, *FBIS SOV*, May 19, 2009), and beyond that demand Gazprom has announced that it will seek exemptions from EU law for the various branches of the South Stream pipeline throughout Europe (which clearly includes much of the Balkans and would create an “EU-free” zone of Russian influence there). The exemptions Gazprom seeks would exclude the EU from any participation or supervision of the pipeline and ensure that it is almost if not as opaque as other Russian energy ventures.

One of the top priority goals of the joint venture after determining the technical and economic parameters of the selection South Stream project option will most likely be filing for the necessary exemptions from the new gas rules (third party access, setting tariffs on the network, separation of ownership of operator and supplier) needed to guarantee the interests of the investors (Moscow, *Interfax*, in English, March 22, 2011, *FBIS SOV*, March 22, 2011).

Swedish analysts have chronicled numerous instances of such use by Russia where Moscow has repeatedly used energy exports, threats, or actual cutoffs to punish states that have conducted policies that it does not like (Larsson 2006, 2007; Nygren 2008). Such operations are still occurring. Indeed Putin has now mocked the West and threatened to turn off gas supplies in return for sanctions directed against Russia (McElroy 2014). In other examples, Belarus’ export trade virtually collapsed during the summer of 2012 due to the closure of the export of solvents and lubricants produced from Russian oil due to the cessation of payments of export duties to Russia (Minsk, *Belorussky Partizan Online*, in Russian, September 3, 2012). In September 2014, Poland, Romania, Austria, and Slovakia all reported cuts in Russian gas supplies which are clearly correlated with Moscow’s efforts to use gas as a political weapon to punish these states either for supporting the West against Moscow or to induce pro-Russian governments in Vienna and Bratislava to lobby for easing the sanctions and continuing dependence on Russian supplies, most notably through the South Stream project. (Russia playing games with gas supplies to spread concern—Romania, Reuters, September 16, 2014).

But it is by no means certain that these Russian games will succeed in intimidating Europe. Moldova recently rejected Russia’s ultimatum dating back to 2012 to cease its policy of drawing closer to the EU or otherwise suffer from much higher gas prices.

The former Soviet Republic, which has embarked upon a winding road toward the EU accession, is due to adhere to the Third Energy Package which forbids a company to both supply and transport gas at the same time. This requirement would affect Russian gas giant Gazprom, which will be forced to sell part of its gas infrastructure in Moldova. Russia announced in January that it contested the package and was seeking juridical means to elude it (Turkish Weekly 2012).

In reply, Russian Energy Minister, Alexander Novak said: “Moldova seeks a 30 % cut ... we propose that the Republic of Moldova denounces the protocol on adhering to the Europe Energy Community Agreement. This is a precondition for us to discuss the

issue of gas price cuts and the relief of debt, which now amounts to \$4.1 billion” (Turkish Weekly 2012). Similarly, Deputy Prime Minister Dmitry Rogozin warned Moldova:

In comments after talks with Moldovan Prime Minister Iurie Leanca, Rogozin likened Moldova to a locomotive on a perilous course of twists and turns that could cause it to lose some of its carriages—an allusion to its rebel enclave of Transdnestr. In a barbed reminder to Moldova of its total reliance on gas imports from Russia, he also said Monday that “energy supplies are important in the run-up to winter. I hope you won’t freeze” (Moscow Times 2013).

Nonetheless, Moldova’s reply was no less blunt:

This is out of question. If we denounced the protocol on the energetic cooperation with the EU, this would mean not one step, but 10 steps back on our European integration road,” Moldovan Parliament Speaker Marian Lupu said. “We must break this vicious circle of Russian gas imports if we want to evolve as a sovereign country. We’ve been captive in this paradigm for too long,” Alexei Strunga, a Moldovan political science student in Bucharest, told *SETimes*. “And EU is the best answer for this. If we do not know how to seize this opportunity, maybe our place is not in the European community after all. And Russia has to learn to also accept ‘no’ for an answer” (Turkish Weekly 2012).

Yet despite Moldova’s resistance, Russia, due to prevailing market conditions, had to lower its prices that it charges Moldova in 2013–2014 (Energetika 2013).

We see the same phenomena in Central Asia. Indeed Putin’s March 18, 2014 speech to justifying the annexation of Crimea declared the whole post-Soviet settlement to be illegitimate, thereby placing every single post-Soviet state at risk (Kremlin 2014). Those threats have already long been prepared or raised well in advance of the Ukraine crisis. For example, on October 19, 2011, Turkmenistan’s Foreign Ministry blasted Russia’s politicized objections to it participating in a Trans-Caspian pipeline (TCP), stated that such a pipeline was an objective vital economic interest of Turkmenistan, rebuked Moscow for “distorting the essence and gist of Turkmenistan’s energy policy,” and announced that the discussions with Europe over this pipeline would continue (Moscow, Interfax, in English, October 19, 2011, FBIS SOV, November 19, 2011). Moscow’s reply came soon. On November 15, 2011 Valery Yazev, Vice-Speaker of the Russian Duma and head of the Russian Gas Society openly threatened Turkmenistan with the Russian incitement of an “Arab Spring” if it did not renounce its “neutrality” and independent sovereign foreign policy, including its desire to align with Nabucco. Yazev said that:

Given the instructive experience with UN resolutions on Libya and the political consequences of their being ‘shielded from the air’ by NATO forces, Turkmenistan will soon understand that only the principled positions of Russia and China in the UN Security Council and its involvement in regional international organizations—such as the SCO (Shanghai Cooperation Organization), CSTO (Collective Security Treaty Organization), Eurasian Economic Union—can protect it from similar resolutions (Moscow, *Interfax*, November 15, 2011).

In other words, Turkmenistan should surrender its neutrality and independent foreign policy and not ship gas to Europe; otherwise, Moscow will incite a revolution there, leading to chaos. Other Russian analysts and officials threatened that if Turkmenistan adheres to the EU's planned Southern Corridor for energy transshipments to Europe that bypass Russia, Moscow would have no choice but to do to Turkmenistan what it did to Georgia in 2008 (Socor 2011).

In Azerbaijan's case, Moscow could support Armenia against it, attack the remittances sent by the several hundred thousand Azerbaijani immigrants working in Russia, or incite ethnic unrest in Azerbaijan and then claim that as a justification for intervention. Indeed here again it has prepared the ground for that contingency. For example, in 2008 Vafa Qulluzada (as transliterated) observed that President Medvedev's visit to Azerbaijan was preceded by deliberate incitement of the Lezgin and Avar ethnic minorities in Azerbaijan by Moscow to induce Azerbaijan to accept Russia's gas proposals (*Kavkazskiy Uzel* in Russian, June 19, 2008, *FBIS SOV*, June 19, 2008). Such policies are clearly systematic aspects of Russian policy across the board from the Balkans to Central Asia. It has intermittently encouraged separatist movement among the Armenian Javakhetian minority in Georgia and all but taken control of the Crimea for potential use against Ukraine (Falkowski 2006, p. 56; Varretoni 2010). And Putin admitted using separatists to plan the war against Georgia in 2008 (Kremlin 2012). Russia states that it has no claims on Azeri territories, but articles in the Russian press have advocated government action to protect these Azeri minorities as Russian citizens to punish Azerbaijan for flirting with NATO (*Interfax*, in English, February 13, 2011, *FBIS SOV*, February 13, 2011).

More recently, as the TANAP (Trans-Anatolian pipeline) came into being in 2012–2013, Russia not only threatened Turkmenistan with violence as noted above, but it reiterated its belief that since legal delimitation of the Caspian Sea has not occurred, neither Azerbaijan nor Turkmenistan has the right to make trans-Caspian gas shipment arrangements. Therefore, any trans-Caspian pipeline would violate international law. It made this statement even though it had rejected that argument earlier when Iran tried to use it to block any accord on the Caspian but has backed up its words with the military buildup described below (Asia Times 2012). Moscow concurrently demanded again that Turkmenistan lower the price of the gas it sells to Russia to retain its price advantages over rival suppliers like Azerbaijan (*Interfax*, in English, March 20, 2012, *FBIS SOV*, March 20, 2012). Finally, the Russian government accelerated the process for completing the signing of contracts for its South Stream pipeline, began construction in December 2012, and ordered Gazprom to build South Stream to a maximum capacity of 63 billion cubic meters (bcm) to freeze out competitors, probably not least because of the progress on the TANAP pipeline (*RIA Novosti*, February 22, 2012).

Beyond these threats, Moscow began talking about buying gas from Azerbaijan market prices in 2007–2008 when it first mooted the idea of South Stream. Ironically, Russia's previous heavy-handed tactics of intimidation had forced Azerbaijan—which had been importing Russian gas—to begin developing its own production. This Russian gambit aimed at diverting Azeri gas from any projected Trans-Caspian or Nabucco pipeline and ensuring that there would be no competition for South Stream. It also probably reflected domestic shortfalls in Russian gas that Gazprom had to make up with imports from other CIS producers (Ebel 2009). While Azerbaijan is selling some gas to Russia, the amounts are relatively small and intended not just to reduce Russian

pressure but also to send Turkey and the Nabucco project's directors a strong signal that they should not take Azeri gas transport to Europe through Turkey for granted and ignore Azeri interests, e.g., rapprochement with Armenia without any mention of the Nagorno-Karabakh issue.

The Ukrainian crisis has led to economic actions such as the cessation of EU cooperation with the ongoing construction of the South Stream project, Russia's critical gas program for supplying southern Europe with gas that bypasses Ukraine and has the political purpose of punishing and bypassing Ukraine in mind (Stoyanov 2013). Since South Stream is intended to supply 63 bcm of gas annually and remove the current 31 bcm that goes through Ukraine to Europe as part of that figure, Russia must come up with 32 bcm that it can ship to the Crimea or southern Russia and thence through the Black Sea to Europe. And it still remains something of a mystery where that gas will come from and whether the distances it has to travel to reach the starting point for South Stream add so much to the already exploding cost of the project as to render it uneconomical. Beyond that, the crisis over Ukraine makes it almost certain that the EU will not give South Stream the many legal authorities it needs to move forward through EU countries anytime soon, including Bulgaria and other Balkan states. And without those legal approvals, South Stream, for all its confident publicity, will remain a pipe dream (Stoyanov 2013). Likewise, it is currently difficult to conceive that the EU's legal charges against Gazprom for violating EU codes in its gas sales will not be further prosecuted, and this too will make it harder for Gazprom to operate in Europe (Stoyanov 2013). Thus, the intensification of sanctions that looks likely at this point plus the legal actions against South Stream could seriously affect its forecasted situation. As a result, the availability of much of the projected gas from South Stream is clouded at best, a fact that also suggests a lack of compelling economic reasons for building this pipeline other than Moscow's determination to subjugate Ukraine to it.

Alternatively, if the gas for South Stream is available thanks to Russia's construction of interconnectors to bring Siberian and Arctic gas south to the Black Sea, the cost of building Russia's version of a "southern gas corridor" (in distinction to a trans-Caspian southern gas corridor) is nowhere to be found in the estimates for South Stream's costs. Yet, we can hardly imagine that Russia will not try to recoup its costs for this investment in interconnectors through the prices it charges for South Stream gas. Indeed, in December 2013, Moscow increased the projected cost of South Stream's construction to over \$22 billion, 50 % more than previous estimates, and gave no explanation for doing so. Furthermore, Gazprom admitted that for the first quarter of 2012, the tariff for gas transit to Germany through the Nord Stream pipeline in the Baltic with a capacity of 55 bcm/year was twice the transit cost through Ukraine. Thus, Germany and other recipients are paying much higher prices so that Russia can circumvent and thus isolate Ukraine (Umbach 2014a). Essentially, this means that the West, despite the sanctions, continues to subsidize Russian military threats to Ukraine and thereby to all of Europe. Accordingly, South Stream is a really bad deal for Balkan countries as they will be paying much higher prices for a much less reliable gas supply.

But to replace Gazprom to any appreciable degree, Europe has to find other stable sources. The new sources coming on stream from the Middle East and North Africa—Algeria, Libya, Egypt (once these countries stabilize), Iraq—also in need of stabilization although that will probably take much longer now, Israel and Cyprus, Azerbaijan

and potentially Iran should it reach agreement with its interlocutors in the current negotiations over its nuclear program—will not come online for 3–5 years at the very least. This means greater reliance on countries like Norway, Qatar, and the USA as alternative producers of LNG. Renewables will not suffice unless there is some major technological breakthrough to supplant Russian exports, and it is quite unlikely that Europe can be persuaded to return to oil and coal as energy sources given the strong environmentalist movements in Europe even though it is buying more coal now that the price of gas has risen due to the presence of shale gas in the USA.

But this is not the only alternative to Russia. It is both strategically and economically worthwhile, especially if the new Ukrainian government gets a chance to succeed with European help, to build up Ukraine's overall energy economy and gas transport system (GTS) and reform it so that Russia cannot play games with it and corrupt it and so that Ukraine can stand on its own feet as an energy supplier to Europe.

Ukraine's GTS, with its 39,900 km of pipelines, 112 compressor plants, 13 underground storage sites—with a total volume of 32 bcm—and 75 compressor stations, has a capacity of around 142 bcm per year, and a potential of as much as 175 bcm. Ukraine could theoretically transport more than 230 bcm of gas every year to Europe if its GTS, its 'crown jewel' was modernized with the EU's support. The EU has already negotiated with Kyiv over the US\$5–7 billion needed to modernize the GTS compared with the total costs of 50–60 billion to build the South Stream pipeline (Umbach 2014a, p. 2).

Thus, it is easily arguable that the South Stream pipeline makes no sense on economic terms and has no justification other than enriching Moscow at Europe and Ukraine's expense and facilitating Russian energy-driven imperialism. Ukraine's own holdings therefore make more sense as an investment in new supplies, especially as the infrastructure for delivering it to markets is at hand.

Ukraine still has domestically significant gas reserves of 969 bcm in addition to 395 million barrels of oil. It hopes to expand its domestic production of gas by exploiting its domestic conventional and unconventional gas resources from around 18 bcm to 30 bcm per year by 2020. According to ExxonMobil, Ukraine's offshore and continental gas reserves could even deliver up to 45 bcm per year by 2020, while Ukraine's National Energy Strategy envisages such a level of domestic production by 2030, as imports are cut to 5 bcm by the same year (Umbach 2014b).

Foreign investors like ENI, EDF have already invested in Ukraine's offshore Black Sea energy products in the Black Sea and its Subbotina, Abikha, Mayachna, and Kavkazka oil and gas fields. This may help explain Moscow's unseemly haste in trying to annex the Crimea and deny those fields to Ukraine (Umbach 2014b).

The alternative of massively exploring for shale has probably received renewed impetus due to the Ukrainian crisis, and we can expect it to resume in Ukraine as soon as conditions permit. But Germany has, wrongly in our estimation, forsaken nuclear energy, thereby adding to its dependence on imported, i.e., Russian gas, and France has renounced shale. There are reportedly large shale deposits in Eastern Europe but

considerable political pressure funded at least in part by Moscow, to prevent governments from exploring them (Burgess 2012). The new crisis, however, may rekindle European interest in shale gas and oil and weaken that opposition. Indeed signs of that rekindled European interest in shale and LNG to replace Russian gas are everywhere. In late 2013, Poland announced that it would start producing shale in 2014 (AFP, North European Service, November 27, 2013, FBIS SOV, November 27, 2013). Lithuania has signed agreements with 12 LNG suppliers, including Statoil, to receive LNG from 2015 to 2020 so it can trade on the domestic and spot markets. Likewise President Grybauskaitė publicly expects US shale gas exports to both Estonia and Lithuania in the nearest future (Baltic News Service, September 2, 2014, FBIS SOV; Hyndle-Hussein, OSW, September 3, 2014), and in talk between the energy ministers of Spain and the USA, Spain announced its readiness to serve as a gateway for US exports of LNG to Europe because it has the largest number of regasification plants in Europe. Indeed, should conditions permit, Spain could deliver up to half of European imports from Russia to Europe (El Pais, September 10, 2014, FBIS SOV, September 10, 2014). Moreover, if the EU ensures that all natural gas storage facilities in member countries are full, that could provide a reserve of 85 bcm more than half of what Russia exported to Europe in 2013. And if it can also identify exporters of LNG to buy from them the 78 bcm shortfall here, it would be able to go through the winter without needing any Russian gas. Spanish and Portuguese regasification facilities allow for such an expansion of imports, and buying this gas would cost 18–20 billion pounds which is much less than the European stability fund's 440 billion pounds to bail it out of the Eurozone, not counting the 110 million pounds it spent to bail out Greece (Bryza, Financial Times, September 1, 2014). These examples suggest that European analysts who predict that Russian gas cuts to Ukraine are unlikely to hurt Europe (and will therefore not have the expected Russian leverage on Europe) are correct or at least have good reason for so arguing (AFP North European Service, August 29, 2014, FBIS SOV, August 29, 2014).

Nevertheless, such explorations involve huge capital outlays and take time to deliver large amounts of gas. Thus, the political will to drive these projects to completion is critical even though Europe is overpaying for Russian gas and thereby subsidizing major threats to its own security. All these factors, taken together, suggest that minus exports from outside Europe, e.g., Qatar, Africa, Australia, and the USA, it will take considerable time and expense for Europe to reduce substantially its dependence on Russian gas and open up the new sources expected to be on line by 2020. In addition, there are many other factors that make it difficult to move quickly here from an economic standpoint.

In 2013, Gazprom's share of the European gas market jumped to 30 %, a significant increase over its 25.6 % share in 2012. And the company expects to maintain its dominance of the European market for years to come. At the London meeting, Gazprom's head of strategy, Dmitry Lyugai, declared: "there will be no shale miracle in Europe." Lyugai may be right. Any effort to dramatically increase gas drilling and production in Europe will take a decade or more. Even if European countries wanted to emulate America's success in extracting oil and gas from shale deposits, Europe doesn't have enough drilling rigs, nor does it have enough trained personnel and service-related infrastructure (Bryce 2014).

Nevertheless, the sorry spectacle of European decision-making during the Ukrainian crisis and the inability to maintain a common front against Russia arguably represents a compelling political justification as well as an economic one. Thus, unless alternatives are found, economic and strategic political dependence on Russia will continue as well as Russia's ability to enforce excessive prices across Europe, hardly an edifying outcome in either respect for Europe. And the conclusions of this dependence, as we have seen in the current Ukrainian crisis, speak for themselves.

However, Ukraine's continuing crisis may ultimately cause Lyugai and other such doubters to recant. The political imperative is clear: dependence on Russian energy corrupts European institutions, inhibits European unity, and allows Moscow repeated efforts to pull off annexations, invasion, etc., of land it covets and present Europe with a fait accompli, thus undermining Europe's sovereignty and security. In the economic sphere, this political dominance does already translate into monopsony if not monopoly pricing in too many countries that further ratifies political domination and violates EU structures. On close examination, it becomes clear that virtually every price charged by Moscow to its European customers reflects political as much as if not more than economic considerations. And to the extent it can be a price setter in a market, it will engage in such monopsonistic or monopolistic pricing. If such pricing arrangements are allowed to continue, they will also represent a massive transfer of wealth to Russia with the attendant political consequences. So, the argument for finding alternatives is compelling on both strategic and economic grounds.

In addition, the expansion of the available gas and oil due to American and probably Canadian exports as well would reduce the incentive to seek energy in the Arctic, whose costs are enormously high and where cooperation between US firms and Russia will undoubtedly encounter mounting political opposition. Striking at the economic foundations of Russia's Arctic position would also seriously harm Russia given its plans for the Arctic.

### **Russia and geopolitics of shale revolution in Asia**

The Russian energy ministry released a draft energy strategy to 2035 on January 24, 2014, which forecasts that 23 % of all energy exports will be sent to the Asia-Pacific region by 2035. "The primary task is to speed up entry into Asia-Pacific markets," the ministry said in a statement outlining the key points. Russia aims to send 32 % of crude and 31 % of gas produced to the region by 2035 (Platts, January 24, 2014). "Energy markets in Europe and the CIS will remain key markets for Russian energy production, but export volumes after 2015 will fall and by the end of the period will be 95 % of 2010 levels" (Platts, January 24, 2014).

Russia's "Asia pivot" is increasingly a reality. As its relations with Ukraine and Europe deteriorate, in May 2014, Russia committed to cooperation with China through a 30-year \$400-billion gas contract, while in June 2014 Gazprom announced that construction of a new pipeline, *Sila Sibiri* (Power of Siberia), to the Pacific will start in August, thanks to a \$25 billion advance payment from its Chinese partners. Recently, the Russian parliament wrote off 90 % of North Korea's debt, a gesture estimated at \$10 billion, in exchange for Pyongyang's agreement to build a pipeline that would run from Sakhalin through North Korea to South Korea.

Russian President Vladimir Putin and Chinese Vice Premier Zhang Gaoli have launched the construction of the first part of Gazprom's Power of Siberia pipeline—which will deliver 4 trillion cubic meters of gas to China over 30 years. “The new gas branch will significantly strengthen the economic cooperation with countries in the Asia-Pacific region and above all—our key partner China,” Putin said at the ceremony outside the city of Yakutsk—the capital of Russia's Republic of Yakutia (RT, September 2, 2014).

Relations with China are critical to another piece of Putin's pipeline strategy—his plan to penetrate the Indian energy market. Russia and India are negotiating the construction of a \$30 billion pipeline—the most expensive ever—to connect Russia's Altai mountain region to the Xinjiang province in northwest China and then to northern India. Unlike the gas pipelines to Korea and China, the pipe to India will transport oil (Luft 2014).

So far, Asia's role in Russia's gas exports has been limited. Russia began to export gas to Asia in 2009 through the Sakhalin LNG terminal. As of the end of 2013, Russia was still exporting only 7 % of Russia's total gas exports. The turn to Asia will not come easily to Russia. With its single currently operational LNG plant in Sakhalin with production capacity of 10 mtpa, Russia is a latecomer to the global LNG business. LNG sold in Japan in May 2014 for about \$15 per 1,000 cubic feet, and in February, it went for more than \$20. But in May, Russia committed to sell 38 bcm of gas per year to China at half that February price—an estimated \$10 per 1,000 cubic feet. When US LNG produced from the shale gas boom begins to reach Asia next year, Citi estimates that it will sell for about the same price—\$10 to \$12 per 1,000 cubic feet (Levine 2014). The US and Russian gas will compete with existing and planned LNG projects around the world toward the end of the decade. According to numbers compiled by Citi, Russia could supply 30 bcm of gas to China by 2020 and as much as 95 bcm to Asia as a whole by 2025. The USA is in approximately the same posture—seven export projects in various stages of approval could export 93 bcm of LNG in a similar time frame (Levine 2014).

Russia wants to double its share in the global LNG market by 2020 from its current 4.5 %. In December 2013, Russian President Vladimir Putin has signed a landmark law breaking state-owned Gazprom's monopoly on gas exports. Gazprom will keep its export monopoly on gas carried through pipelines, but the new law will allow Russian producers to export liquefied natural gas. Gazprom was under pressure of the domestic competition from Rosneft and Novatek on the LNG market. In recent years, as they expand their operations inside Russia and push ahead with LNG exports, independent gas producers are developing LNG facilities that are likely to serve the growing Asian energy market (*Rianovosti*, December 2, 2013).

Five new LNG projects plus a new train at an existing plant are expected to come online before 2020, expanding Russia's current LNG production of 10 mtpa to 60 mtpa (81 bcm) (Suvorova 2014). This new LNG production capacity is part of Russia's broader strategy that involves reducing its reliance on European markets and becoming one of the top gas suppliers to the Asia-Pacific region. Yamal LNG is one of the most actively developed ones. It is a 16.5-mtpa, \$27-billion project located in the Yamal peninsula and owned by Russia's largest independent gas producer Novatek (60 %) in partnership with French energy major Total (20 %) and China National Petroleum Company (CNPC) (20 %) (Suvorova 2014). Another project is Gazprom's Baltic LNG,

capable of producing 10 mtpa. Gazprom and local Russian authorities signed the memorandum on the project in June 2014, planning to sell up to 49 % of the stakes and to launch production at the end of 2018 (Suvorova 2014). Rosneft and ExxonMobil are also on track to launch production at a Dalnevostochny LNG plant with initial capacity of 5 mtpa by 2018–2019 on Sakhalin. Gazprom is also working on a third production train of an additional 5 mtpa at Russia's only operational LNG plant, Sakhalin-2. In 2013, Gazprom also took a final investment decision to build a 15-mtpa liquefaction plant near Vladivostok, although the project faces delays and will begin output in 2019 or 2020 instead of 2018 (Suvorova 2014).

For Russia to be able to compete in this new growing market, it needs to increase the number of buyers and to shift to the more dynamic markets in the East. LNG serves this purpose because it will help reach the distant markets and provide flexibility, while pipeline gas shipments based on long-term contracts will signify reliability of supply and stable profits. US and EU sanctions issued at the end of July have targeted Novatek, the main shareholder in the Yamal LNG (liquefied natural gas) project, among other Russian oil and gas companies. Sanctions regarding technology exports could be crucial in complex projects such as LNG production, which may rely on US components and technology.

Indeed Russian energy prospects in Asia are quite problematical, making opportunities for US exports particularly attractive beyond the price differential with Europe. Russia has discussed large-scale oil and gas sales to East Asia with East Asian countries for over 20 years. But the results to date are not much to brag about even if we take the recent huge gas deal between Russia and China into account. Gas deals with Japan and South Korea have stagnated, and China is essentially paying for Russian gas at cost. While this huge deal will probably lower gas prices in Asia, that only enhances Europe's attraction as a source of exports to suppliers without negating the spiraling demand that also makes Asia attractive to US suppliers (Weitz 2014, pp. 80–86).

The only relatively positive area in Russian energy sales to Asia before this gas deal of May 2014 is oil sales to China. While the East-Siberia Pacific Ocean pipeline (ESPO) has been up and running since 2011, it was enmeshed in litigation in 2012, and in effect China is buying Russian oil at prices below Henry Hub or global market levels when one figures in payments on the \$25 billion loan it made to Russia to build that pipeline. Nevertheless, China is receiving oil from Russia for 2014, and China has also advanced Rosneft \$12 billion as part of the deals it concluded with Rosneft in 2013 (Beijing, *China Daily Online*, in English, January 22, 2014, *FBIS SOV*, January 22, 2014). In those deals, Rosneft agreed to supply CNPC (China National Petroleum Corporation) China with 365 million tons of oil for 25 years worth \$270 billion. In return, CNPC has apparently made a pre-payment to Rosneft of \$60–70 billion. This amounts to 15 million metric tons of crude oil annually for 25 years at just over \$10 billion annually. And this oil will probably go through the existing East Siberia Pacific Ocean (ESPO) pipeline to Daqing, China.

In subsequent deals during 2013, at the recent Sino-Russian summit, Rosneft gained a contract to triple the size of current oil deliveries to China to 900,000 BPD, putting it on a par with Saudi deliveries to China. But it won those contracts only at the price of agreeing to further huge Chinese loans of \$25–30 billion as infusions of cash to Rosneft and agreeing to facilitate Sinopec's acquisition of oil and gas assets in Russia. Specifically, Rosneft would consider Sinopec's participation in its large-scale project

in the RFE, the Eastern Petrochemical Refinery jointly established in 2007 by Rosneft and Sinopec's rival CNPC, China National Petrochemical Corporation (Zhdannikov and Soldatkin 2013). While China will loan Rosneft \$2 billion backed by 25 years of oil supply, Rosneft will boost oil exports to China by 800,000 metric tons this year, and annual exports may reach 31 million tons annually or 620,000 barrels a day, more than doubling present exports. Igor Sechin, Rosneft's Chairman, even hinted at going to 50 million tons per annum. This deal with CNPC to drill in the Pechora and Barents Seas in the Arctic also highlights CNPC's growing clout in global markets. Finally, Gazprom also announced its intention to conclude the long-awaited gas deal with China in 2013, and that deal too apparently also involved advance payments from China to an increasingly vulnerable Gazprom (Weitz 2014, pp. 80–86; Katakey and Kennedy 2013).

While China may become Russia's biggest customer, for oil it will do so while it has an enormous cushion of alternative suppliers for both oil and gas and very likely leverage over oil and gas pipelines that go exclusively to China.<sup>1</sup> Meanwhile, Moscow and Rosneft will depend excessively on exports to China in Asia through these leveraged pipelines because Moscow has no other Asian consumer for this oil. This, as energy experts everywhere know, is not a winning strategy for Russia.

Indeed this sequence illustrates how the pursuit of sectoral, personal, and factional gain and short-term horizons of getting cash to cover debts run up due to irrational market decisions and state policies undermines Russia's position in both the RFE and Asia at large. Thus, these deals may well come at the expense of Russia's national interest and have strings attached as China is gaining leverage on key elements of Russia's crown jewel, its energy sector. Similarly, even though China is ramping up its Arctic presence and disputes Russia's claim to much of the Northern Sea Route and the Arctic's waters as part of its Economic Exclusion Zone, Russia recently signed several agreements with China to provide capital for its exploration of the Arctic.

This trend, if allowed to continue without interference or substantial rivalry, could ultimately undermine Russia's efforts to bandwagon with China as an independent actor against US policy on the global scale, missile defense, democracy promotion, and proliferation, while hedging with other Asian states against China's claims to regional hegemony. The lopsided energy policy emerges clearly when we look at Russian energy relations with Japan and South Korea. At present, there is no direct oil pipeline to Japan or South Korea, and we know that from the economic and geopolitical point of view a pipeline to one customer is owned by the customer, not the producer. That outcome hardly squares with Russia's avowed objectives for the sale of oil or gas to Asian countries. As a result of this fact, Rosneft has, since 2012, had to make concessions to China over the disagreement on the pricing formula for pumping oil through this pipeline. Thus, China's monopoly on Russian energy investments in the Far East stokes fears of Russia becoming ever more in thrall to China due to its failure to diversify its customer base (Moscow, *Russia Direct/ Kommersant-Vlast*, in Russian, January 7, 2014, FBIS *SOV*, January 7, 2014). If anything, the gas deal with China only reinforces this prospect for Russia because Western sanctions are driving it ever closer to China and to greater dependence upon it for economic markets and relief. And this

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<sup>1</sup> As experts know, when a pipeline goes only to one country, the consumer in effect owns the pipeline as he can determine whether or not to receive supplies at any time, leaving the supplier with no options.

question of the number of customers for the product of a pipeline is probably at issue as well in the discussion of gas pipelines from Russia to China. For example, any gas pipeline from Russia to the ROC would, minus Pyongyang's assent, have to traverse China because Beijing has already long ago vetoed any alternatives through Mongolia. But a pipeline to South Korea through the DPRK bypasses China, reduces its leverage on Russia who thereby gains alternatives with which to supply Asia, and allows Russia to offer a higher price. This pipeline, if it ever materializes, allows Russia to pressure China with the fact that Moscow now has alternatives in Asia. At the same time, apart from Sakhalin-II, there are likewise no direct Russo-Japanese energy deals of major consequence, although Rosneft signed an agreement in 2013 to sell LNG (liquefied natural gas) from a terminal it operates with Exxon Mobil on Sakhalin to Marubeni, the Japanese trader and the Japanese-owned Sakhalin Oil and Gas Development Company (Marson 2013).

More recently, the long-standing Russian plan for a trans-Korean gas pipeline connected to East Siberian gas fields has gone nowhere. Indeed in late 2013 Russian President Putin publicly stated in Seoul that "We are already building an infrastructure link from Sakhalin Island to Vladivostok, from where the pipeline could go on to South Korea either via North Korea or via the sea route" (Kremlin 2013). Thus, Putin effectively warned North Korea that if it did not move quickly, Russia would then nullify its 2011 proposal to build a trans-Korean pipeline linked to Siberia and give up on North Korean participation in that project. Indeed the fact that at Seoul Putin offered to collaborate with South Korea on projects inside North Korea without inviting the DPRK suggests that he and Russia may be trying to bring about a form of inter-Korean cooperation mainly or exclusively through South Korean means.

These developments show that not much has been achieved in Asia regarding oil or gas exports. Japan and Korea still do not get much of either from Russia, and although China is in line to obtain large-scale oil supplies, the geopolitical price may turn out to be unaffordable and one cannot mistake contracts for exploration with actual projects and pipelines. Beyond what this failure to break through Asian markets regarding energy exports means for Russia's development of Siberia and the Russian Far East (RFE), and its overall Asian policy that is premised upon being a major energy power in Northeast Asia, Moscow faces another looming challenge that could cripple its entire policy here if not do it irreparable harm. That challenge is the looming question of whether or not the USA will export large-scale stocks of its shale gas and LNG to Asian markets. Should Washington decide to do so, that would not only represent a devoutly wished consummation for countries like India; it would become a geostrategic game changer as far as Russia's overall energy and overall Asian policy are concerned. Indeed shale gas is, as described below, already affecting the Asian gas equation because declining American imports are leading Middle Eastern exporters to redirect exports to East Asia (Makan 2014). And if China's reportedly vast shale reserves that equal the US and Canadian shale reserves combined are opened up for exploration (and this is a very debatable prospect because the freaking process necessary for doing so could gravely threaten China's already at risk water supply), shale gas could dramatically transform the Asian energy landscape. Indeed in 2013 Chinese officials announced that China is unlikely to reach its target for shale gas production by 2015 due to slower-than-expected development of initial shale gas fields and government intervention that has kept the price of domestic gas too low.

At the same time, there are those like BP who believe that Russia will be producing 800,000 BPD of shale or tight oil by 2035 so that it might also be able to produce large amounts of shale gas (Makan 2014). For instance, Lukoil evidently believes that it can convert the West Siberian Bazhenov field to shale and reverse the area's declining output to produce 10MMBPD of shale oil if the industry gets new tax breaks from the government. But in fact that figure is only an estimate, and it will take costly exploration to determine this and other fields' real capability. Moreover, the Western sanctions' impact makes that process quite unlikely for the foreseeable future. Neither can we be certain that industry will receive those tax breaks or be up to the ensuing challenge of realizing its rosy predictions. Nor is it at all clear that Moscow fully understands all the aspects of shale gas and/or oil or, perhaps more importantly, has truly begun to formulate, let alone implement, a coherent response to that prospect.

## Conclusions

On March 25, 2014, the House Subcommittee on Energy and Power moved to consider legislation to reform US energy export laws and expedite exports of LNG from the USA to its allies even though under the best of circumstances it would take 2 years to build a facility that would be ready for commissioning. Brussels can place further legal and political pressure on South Stream, and both the EU and the US can promote new investments in Ukraine and to strengthen ties with other producers in Africa and Asia, including the Southern Gas Corridor which would require a much more robust policy towards Azerbaijan and Turkmenistan and much deeper US engagement in the Caucasus and Central Asia. Washington can not only enact new legislation but also make clear its determination to export shale and LNG to Europe and/or Asia, thereby freeing up supplies that will go to the market it does not choose and reducing Russia's clout in those markets.

But to do so, Washington must lead the way in investing not only in shale and LNG and the infrastructure necessary to produce, refine, store, and ship oil and gas to its customers at home and abroad and make the necessary investments to sustain the global climate in the face of climactic challenges. It is by no means clear that enough capital exists to meet the necessary investments in all these fields (IEA, 2014) But apart from the challenges to economic growth and the climate (with all the attendant consequences) of failing to meet those challenges, failure to make the necessary investment in unconventional or shale and LNG fossil fuels as well as alternative energy sources not only ensures further Russian efforts to blackmail or subordinate Europe; it also ensures an ever more difficult climate in real as opposed to political terms. Therefore, much more political will in the USA and abroad is needed to encourage existing trends to work out and to depoliticize energy markets and make a global market for gas that is relatively immune to political power plays.

Brussels and Washington can also facilitate the construction of LNG terminals in Europe to receive LNG from other non-Russian producers and the building of interconnectors to bring more Caspian and Ukrainian energy to Turkey to reduce its excessive dependence on Russia. They can also help Iraq resolve its issues with the Kurdish Regional Government (KRG) and destroy ISIS as intended by the USA to reach agreement on energy policy in Iraq and thus bring huge amounts of energy to

Turkey and Europe either through Turkey or through Azerbaijan which has invited Iraq to ship gas through its Trans-Anatolian Pipeline (TANAP) to Turkey, Greece, Albania, and Italy. If Iran does decide to abandon the quest for nuclear weapons and rejoin the world, it is also quite likely that investments to Iran to tie it into global energy markets and exploit that huge reserve will also hasten a reduction of Russian capacity for troublemaking.

In addition, Washington could decide to export oil from its Strategic Petroleum Reserve (SPR). According to Phillip Verleger, Director of the Office of Energy Policy of the US Treasury during the Carter Administration, the USA could sell 50–75,000bpd for 2 years without breaching its legal obligations to maintain reserves equaling 90 days of imports. He calculated that this would reduce global oil prices by \$10–12/barrel. While this only cuts prices by about 10 % of price, it will seriously affect the Kremlin adversely by cutting Russian export income by about \$40 billion, about 10 % of its fuel export income, and reduce GDP by as much as 4 %. This would also accelerate the ruble's decline and increase Russia's already serious economic difficulties while benefiting European consumers, and because Russia links oil to gas prices, this would also reduce the price being paid by European gas consumers. This would also benefit Washington because it would cut crude oil and thus petrol prices to as much as 25 cents per gallon, generating a profit from sales of SPR oil that could go to reduce the US deficit.

Such policies are necessary for our own self-preservation given climate change apart from Russian policies. If anything, Moscow is infinitely more vulnerable to such pressure, strategically applied, and its behavior, and rhetoric, properly interpreted, shows that it knows this but counts of a Western failure of nerve. The preponderance of economic and other forms of power overwhelmingly resides in the West, but it must muster the will to use these instruments of power to maximum or optimal advantage. If Western economic power is to function here as the functional equivalent of bayonets, it would be well to remember Talleyrand's sage advice to Napoleon. "Sir, you can do anything in the world with bayonets except sit on them."

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