Radu Dudău

Pregledni znanstveni članek

# EVRAZIJSKA ENERGETSKA VARNOST: NAJNOVEJŠI TRENDI V EVROPSKI IGRI PROJEKTOV ZEMELJSKEGA PLINA

# EURASIAN ENERGY SECURITY: RECENT TRENDS IN THE EUROPEAN GAME OF NATURAL GAS PROJECTS

Review article

**Povzetek** Članek obravnava razvojne možnosti obsežnih projektov za plinovode, ki naj bi skladno z načrti na eni strani povezovali Evropo s Kaspijsko regijo (plinovoda Nabucco in Južni tok), na drugi strani pa s severozahodno Sibirijo in Barentsovim morjem (Severni tok). Analiza kaže, da se bo prva faza gradnje plinovoda Severni tok verjetno začela pozno spomladi leta 2010, čeprav projekt še nima plinskega polja, ki bi zagotovilo zadostno oskrbo za drugo fazo. Usoda plinovoda Nabucco je še vedno negotova, čeprav je bilo nedavno doseženo nekaj političnega napredka. Projekt Južni tok je zgolj »papirnati tiger«, katerega namen je predvsem spodkopati projekt Nabucco. Nekateri tudi trdijo, da je odprtje plinovoda med Srednjo Azijo in Kitajsko, ki Turkmenistanu omogoča dostop do še enega velikega izvoznega trga poleg Rusije, odločilna poteza v igri s plinovodi. Sploh pa naj bi razvoj nove infrastrukture za utekočinjeni zemeljski plin in obetavni rezultati razvojnih dosežkov v zvezi z »nekonvencionalnim plinom« na Madžarskem kazali na to, da igra s plinovodi ne ogroža varnosti evropske dobave.

**Ključne besede** ***Energetska varnost, južni koridor, Nabucco, Južni tok, Severni tok, Beli tok.***

**Abstract** The paper discusses the development prospects of the major gas pipeline projects planned to link Europe to the Caspian region (Nabucco and South Stream), on the one hand, and to northwestern Siberia and the Barents Sea (Nord Stream), on the other hand. The analysis indicates the following: the construction work of Nord Stream's first phase will likely start in the late spring of 2010, though the project has no developed supply field for its second phase; Nabucco's fate is still uncertain, in spite of some recent political progress; and the South Stream project is a mere "paper tiger," working mainly to undermine Nabucco. Besides, it is argued that the opening of the Central Asia-China pipeline, which gives Turkmenistan a major export outlet other than Russia, is a true "game changer," and that along with the development of

new liquefied natural gas (LNG) infrastructure, the promising results of "unconventional gas" developments in Hungary show that Europe's security of supply is not exhausted by the pipelines game.

Key words ***Energy security, Southern Corridor, Nabucco, South Stream, Nord Stream, White Stream.***

Introduction

## The EU-Russia energy interdependence

The EU currently imports more than 40% of its natural gas from Russia, a figure which is expected to rise to 60% by 2030. The level of dependence is considerably higher for a number of European states which rely on Russian imports for virtually their entire gas needs.[1] The situation did become a public concern during the Russo-Ukrainian "gas war" of January 2009, which left parts of South-East Europe in the cold for two weeks in the middle of the winter. Gazprom, the monopolist exporter owned 51% by the Russian state, which produces around 19.4% of the world's total output of natural gas, sells two thirds of its gas to the EU countries. In 2006, for instance, Gazprom's gas sales to Europe reached 161.5 billion cubic meters (bcm), exports to the CIS and the Baltic States amounted to 101 bmc, while the Russian domestic market received 316 bcm, or about 54.6% (Mitrova, 2008: 2). The Russian market price is considerably lower than what EU countries pay on average. Since about two thirds of Russia's export earnings come from oil and gas, Europe is by far the largest and most profitable market for Russian energy sales.

Apparently, the equation of energy interdependence between Europe and Russia is simple: the world's biggest gas market meets the world's largest gas producer, and each of them has what the other one needs. Yet the real picture is much more complicated. In fact, the situation is structurally dissatisfying for both parts.

On the one hand, the EU member-states – despite important differences among them in their dependence on Russian gas and the warmth of their relations with Moscow – have grown concerned about Gazprom's capacity to produce sufficient natural gas for the domestic market and its export obligations. These worries typically draw on the following kind of considerations: "Russia's energy production remains imperiled by inefficiency, underinvestment, politicization, high taxes, and falling prices – not to mention the increasingly urgent search for ways of moving beyond a carbon-based economy" (Mankoff, 2009: 8). Besides, the new members of the European Union have obvious apprehensions about the possible Russian misuse of energy as a means of political coercion. Again, the January 2009 gas crisis galvanized the European determination to reduce that level of dependence, though this has not really translated into anything of a common, broad and coherent EU-level approach to energy security. Rather, a loose consensus has in practice (re-)emerged among the European

[1] *According to Gazprom, while Finland, Slovakia, Serbia and Bulgaria all import over 90% of their gas from Russia, states like Italy, France, Romania, the Netherlands and Belgium all depend for less than 25% on Gazprom.*

institutional and business actors of the energy scene regarding the diversification of the sources of supply and delivery routes for imported hydrocarbons, and about the development of renewable energy sources.

The conceptual pillars of this consensus were articulated in November 2008, as the European Commission published its Second Strategic Energy Review, titled "An EU Energy Security and Solidarity Action Plan"[2]. Importantly, the document proposes a five-point "energy security and solidarity action plan" for the EU, focusing on the development of the energy infrastructure and diversification of energy supplies, on stocks of hydrocarbons and crisis response mechanisms, and on energy efficiency. Of course, these policies were circumscribed to EU's commitment to the so-called "20-20-20" initiative: "reducing greenhouse gas emissions by 20%, increasing the share of renewables in the energy consumption to 20% compared to 8.5% today and improving energy efficiency by 20%, all by 2020".[3]

Regarding the promotion of infrastructure, the following six points were promoted as priorities of the Commission: (1) connecting the energy markets in Europe; (2) creating a Southern Gas Corridor "for the supply of gas from Caspian and Middle Eastern sources"; (3) developing sufficient liquefied natural gas (LNG) facilities and storage capacities; (4) completing a Mediterranean "energy ring," "linking Europe with the Southern Mediterranean through electricity and gas interconnections"; (5) developing North-South gas and electricity interconnections with Central and South-East Europe, "building notably on the [Hungarian] New European Transmission System (NETS) initiative to create a common gas transmission system operator;" and (6) preparing a blueprint for a North Sea offshore grid, in order to "interconnect national electricity grids in North-West Europe and plug-in the numerous planned offshore wind projects."[4]

In relation to EU's external suppliers of hydrocarbons, the Second Strategic Review advocates the development of a "new generation of 'energy interdependence' provisions" based on the principles of the Energy Charter Treaty, aiming at a "balance between security of demand and security of supply."[5]

In practice, however, these precepts have been typically trumped by the particular interests and priorities of individual member-states. Also, Moscow has little interest in ratifying the Energy Charter Treaty, whose provisions would contribute to leveling the field of its energy deals with Europe.

Concerning natural gas, the security of supply injunction is to achieve at least a moderate level of geographical diversification away from the Russian sources and pipelines. Yet, as will be seen below, perceptions of competing interests among

[2] *http://ec.europa.eu/energy/strategies/2008/2008_11_ser2_en.htm*

[3] *http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0781:FIN:EN:PDF, p. 2*

[4] *Idem, pp. 4-5*

[5] *Idem, p. 8*

individual EU states and influent non-state actors – i.e., big European energy companies with lucrative contracts with Gazprom[6] – result in slow progress toward an effective European energy policy, with hesitant, suboptimal and sometimes mutually undermining actions.

Then, apart from diversification, the EU's energy security is indeed significantly enhanced by a gradual integration of its gas energy markets. The interconnectivity of the national networks would offer the means for other EU states to help in times of crisis. Besides, larger regional markets are more efficient in attracting investment and in bargaining with external suppliers. The New European Transmission System (NETS), a 2007 Hungarian initiative by MOL company of setting up a regional network in South East Europe, is a remarkable example. Also important is the creation of the Agency for the Cooperation of Energy Regulators (ACER), hosted by Ljubljana, as an instrument of extending a common regulatory framework which would allow coordination at the EU level. Undoubtedly, ACER's efficiency will depend on its ability to overrule national regulators on issues connected with security of supply and the operation of cross-border transmission systems (Mankoff, 2000: 28).

On the other hand, if the EU countries strive to diversify away from Russia, no wonder that Gazprom also looks for ways of diversifying away from Europe. Gazprom prioritizes the development of its East Siberian and Far-Eastern hydrocarbon fields in order to expand its presence in the Asian market and to supply its own Far East provinces. Since 2009, Russia has become a player on the global LNG market, with the opening of an LNG terminal on Sakhalin Island, from which Russia has started exporting to Japan and South Korea. Nonetheless, Europe is and will likely remain Russia's key market for a long time to come.

Moscow has resented the capacity of some transit states – notably Ukraine and Belarus – to block its East-West transport of gas. Consequently, it aims both at taking over the control of these countries' pipeline systems,[7] and at building circumventing pipelines – be it in excess capacities – that would provide alternative routes. But the sheer size and directness of the Ukrainian pipelines, plus the huge storage capacities that accompany them, make it probable that most of the Russian gas will keep flowing westwards through Ukraine. Moreover, after the recent win of Viktor Yanukovych in the Ukrainian presidential elections, Kiev has repeatedly advanced the concept of offering Gazprom a substantive share in Ukraine's gas transit system in the guise of a Ukrainian-Russian-European consortium, in return for a sizeable price cut of its massive imports (Socor, 2010a; 2010d).

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[6] *Although openly embracing free-market norms and practices, some major European energy companies have in fact been pressing for their own preferential long-term deals and been constantly expecting the geopolitical backing of their national governments (Youngs, 2009: 5)*

[7] *The Belarussian gas crisis of 2007 ended with Gazprom taking a controlling stake in BelTransGaz, the Belarusian pipeline monopoly.*

Both the EU countries and Russia support the construction of new pipelines, yet that support is unevenly allocated to different projects. Some of the EU member-states see themselves threatened by the Russian political leverage in the energy trade and seek to avoid the entrapping of a monopolistic pricing system; hence they favor a non-Russian project. Others would just take in as much gas as possible regardless of how it reaches them, and therefore subscribe to all pipeline projects that are economically viable – Russian or non-Russian. Besides, apart from security of supply considerations, some West European powers also benefit from the deep involvement of their giant energy corporations in these pipeline projects.

The Western-backed project that would bring Caspian gas to Europe through non-Russian territory bears the name of Nabucco. As we shall see in section 3, Nabucco has been integrated in the above mentioned EU's concept of the Southern Gas Corridor of hydrocarbons transport from the Caspian region to Central Europe. In its turn, Russia wants access to the European market through a multitude of channels, so as to avoid reliance on any individual transit state. A strategy of "excess capacities" of delivery offers Moscow political influence over the transit states just because it could choose an alternative transit route. Indeed, the Russian "grand design" includes a multitude of projects, adding to the current Soviet-times capacities: Nord Stream, on the bottom of the Baltic Sea, from Russia to Germany, meant to avoid the Baltics and Poland; South Stream, on the bottom of the Black Sea, from Russia to Bulgaria, meant to avoid Ukraine and Turkey. There has also been talk – even though less and less convincing – about the westwards extension of the Blue Stream pipeline, which currently links Russia to Turkey, underneath the Black Sea. Sections 3 and 4 discuss the rationales and the evolution prospects of these projects, among others.

In particular, I argue that two important "game-changers" have emerged in the economy of the East-West gas flows:

(1) The December 2009 opening of the Central Asia-China pipeline, which provides Turkmenistan with a very significant export outlet other than Russia, added to the more modest, though also important, quantities sold to Iran (see section 2). Against the background of a stagnant Russian production of natural gas, it will be shown that this raises serious problems for Russia's ability to acquire sufficient gas for re-export in Ukraine, and to fill mammoth projects such as South Stream, which is planned to tap into Caspian gas. Indirectly, Nord Stream's second phase is likely to be affected too, as Moscow will find it difficult to free up volumes from the domestic market that are otherwise supplanted by Turkmen imports.

(2) The promising results that alternative technologies of gas production – so-called "unconventional gas", obtained through hydraulic fracturing of shale rocks – have in Europe. These results point to an immense potential. Therefore, there is more to Europe's energy security than the gas pipelines game.

## 1 TURKMENISTAN'S NEW OUTLETS

On December 14, 2009, the Presidents Ju Jintao of China, Gurbanguly Berdimukhammedov of Turkmenistan, Nursultan Nazarbaev of Kazakhstan, and Islam Karimov of Uzbekistan celebrated at Samandepe, in eastern Turkmenistan, the valve-opening ceremony of the new Central Asia-China gas pipeline. The line has a planned total capacity of 40 bcm/year (consisting of 30 bcm from Turkmenistan and 10 bcm from Kazakhstan) and is more than 1,800 kilometers long. It starts from Turkmenistan's Bagtyarlik gas field, near the Uzbek border, on the right side of the Amu Darya river, and it goes 188 km on Turkmen territory, then runs about 550 km through Uzbekistan and 1,300 km via Kazakhstan and before entering China in the Xinjiang region (Socor 2009a).

The framework agreement on the pipeline construction and gas supplies was signed in April 2006 between China and Turkmenistan. The project developed at an improbable speed, with the signing in 2007 of the agreement on exploration and production of the Bagtyarlik field by China's National Petroleum Company, and also of the agreement between Kazakhstan and China on the construction of the Kazakh segment of the line. The latter incorporates segments of the preexisting pipeline from Uzbekistan to Almaty. The maximum planned volume of gas will flow after the completion of a second, parallel line in Kazakhstan, starting in 2010.

The strategic consequences of this achievement are very important. For one thing, Russia's monopsony on Turkmen natural gas has been broken. Until recently, Moscow bought almost entirely the quantities of Central Asian gas that were up for sale, amounting even to 80 bcm/year. Of this, Russia re-exported one part to Ukraine and Europe, at increased prices, and used the rest on the domestic market, thus freeing up quantities of West Siberian gas for exports to Europe. To these quantities of gas, Turkmenistan contributed with almost two thirds, for which Gazprom had paid until the end of 2008 the cheapest price of all its Central Asian suppliers: a bit over one third of the average European netback price. Thus, given the stagnation of Russia's own gas production, the Turkmen gas has constituted an essential part of Gazprom's business model.

On January 1, 2009, Gazprom began paying European-level rates for the Turkmen gas, and honored its commitments despite the major drop in European demand. In the spring of 2009, however, after the visit to Moscow of President Berdimukhammedov, the relations between Moscow and Ashkhabad started to degrade, since Turkmenistan refused to assure the leadership of Gazprom about giving up its drive toward diversification of market outlets (Renaud, 2009, 3). Consequently, the signing of an agreement on the construction of a gas pipeline from the gas fields in Eastern Turkmenistan to the Caspian shores was deferred. Back in Ashkhabad, Berdimukhammedov announced the launch of an international bid for the construction of that pipeline, whereupon Gazprom reacted by announcing a progressive reduction in the volumes of gas bought from Turkmenistan. Because of

poor communication between Gazprom and Turkmengas, an explosion took place on April 8 near the Uzbek border, due to the build-up of an excess of pressure in the pipeline. Although Gazprom authorities behaved thereafter as if nothing extraordinary had happened, Turkmenistan reaffirmed its policy of diversifying gas exports.

And indeed, the Central Asia-China pipeline begins by transporting 5 bcm in 2010 and is due to rise to 30 bcm/year by 2013. An additional quantity of 10 bcm/year will be delivered to China after the completion of the second stage, in 2011. China's State Development Bank opened a $4 billion line of credit to Turkmengas for exploration and production in the South Yolotan and Osman gas fields. Hence, all in all, China's intake of Turkmen gas is likely to surpass the purchases by Russia in the near future (Socor, 2009i).

The inauguration of yet another pipeline is due to take place soon in Turkmenistan: from the Dauletabad field (known until 1991 as Sovietabad and dedicated until now to exports to Russia) to Salyp Yar in Iran. The initial capacity of this pipeline is 6 bcm/year, scheduled to increase to 12 bcm in the second phase. The new pipeline to Iran will add to the existing one, Korpeje-Kordkuy, commissioned in 1997, with a capacity of 8 bcm/year. Overall, the Turkmen exports to Iran will add up to 20 bcm/year (Socor, 2009j).

As already pointed out, the importance of these changes can hardly be overestimated. Turkmenistan now certainly has more power in negotiating with Russia on the sale of future gas volumes. But the impact is more direct on Russia's ability to bring to an end its diversification projects for the European market: Nord Stream and South Stream. South Stream, whose sources of Caspian gas remains unspecified, will almost certainly not be fed with Turkmen gas. For Nord Stream's second phase, again, the lack of Turkmen imports will block the volumes of West Siberian gas earmarked for export to Germany – we shall discuss these projects in more detail in the next section. Then, China will also have a stronger hand in the negotiations with Russia over the purchase of gas from eastern Siberia, because from now on China does not depend on a monopolistic provider any longer (Socor, 2009k). Finally, Azerbaijan itself has contemplated the possibility of exporting eastward, to China and other East Asian markets, out of frustration with the slow progress of the Nabucco project and with the dispute with Turkey over transit terms and revenues for the Azerbaijani gas transiting Anatolia (Petersen, 2009a). But this remains a rather rhetorical threat, as shall also be argued in the next section.

Meanwhile, however, Russia keeps significant leverage upon Turkmenistan's foreign policy. The prospect for Ashkhabad to directly access the European gas market is fatally limited by Moscow's – along with Iran's – vehement opposition against the construction of a Trans-Caspian pipeline, which would run on the Caspian seabed from Turkmenbashi to Baku. Moreover, Moscow is adept at linking energy security with other issue areas – including military security. On December 22, 2009, President Dmitri Medvedev visited Turkmenistan. The agenda of the

meeting between Medvedev and Berdimukhammedov included the signing of an agreement on the resumptions of gas deliveries from Turkmenistan to Russia early next year (Stratfor, 2009c). Yet the emphasis of the visit was on Russia's endeavor to keep Uzbekistan in check – Turkmenistan's northern neighbor, which Ashkhabad regards as a threat, as it dominates the population core in the Fergana Valley and can thus project influence via its ethnic majority not only in Turkmenistan, but also in Tajikistan and Kyrgyzstan.

## 2 NABUCCO AND SOUTH STREAM

Nabucco is the main Western-backed gas pipeline project meant to reduce the European energy dependence on Russia. The line would continue the extant Baku-Tbilisi-Erzurum gas pipeline, cross Anatolia east to west and then climb north-westwards through Bulgaria, Romania, Hungary and Austria till the terminus hub, Baumgarten an der March, near Vienna. The total length of the projected pipeline is 3,300 km. The construction work is due to start in 2010 – according to 2008 estimates (Torello, 2008), though it is likely that even this date will be pushed back – and is scheduled to be completed in 2014. The estimated cost climbed in 2008 to €7.9 billion, due to the increased price of steel, up from the initial estimate of €4.6 billion (Gutlederer, 2008), but is now likely to be revised downward again, after the global economic crisis.

Although the protocol of intention on the construction of the pipeline was signed in 2002 by OMV (Austria), MOL (Hungary), Bulgargas (Bulgaria), Transgas (Romania) and Botas (Turkey), progress has been slow and mined with setbacks. The feasibility study of the project was financed 50% by the European Commission. The joint venture agreement was signed by the five consortium members in June 2005. Thereafter, no noticeable progress had been registered until February 2008, when the German public utility RWE joined the consortium.[8]

Undoubtedly, it was the Russo-Ukrainian gas spat of January 2009 that triggered a new wave of political interest in the fate of Nabucco. On January 27, 2009, a Nabucco Summit took place in Budapest, at which the heads of the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD) pledged to offer financial support for the project (Deutsche Welle, 2009). The next day the European Commission announced the allocation of €250 million through EIB, to jumpstart construction (Harrison, 2009).

Another major step was the Southern Corridor Prague Summit of May 8, 2009, which brought together representatives of Kazakhstan, Turkmenistan, Azerbaijan, Georgia and Turkey, together with representatives of EU institutions. The summit

[8] *The current sharesholders of the Nabucco Gas Pipeline International GmbH are, according to the official website of the consortium, the following: Botas AS, Bulgarian Energy Holding EAD, MOL Plc, OMV Gas & Power GmbH, RWE AG, and Transgas SA, each holding an equal share of 16.67% (www.nabucco-pipeline.com, March 25, 2010).*

operationalized the concept of Southern Corridor, as delineated in the above quoted Second Strategic Review (EurActiv, 2009). In the Joint Declaration, the "Southern Corridor" countries committed explicitly to complete the Trans-Caspian link for hydrocarbons, to sign by the end of 2009 an intergovernmental agreement for the Turkey-Greece-Italy Interconnector (ITGI), and to sign memoranda of understanding with Iraq and Egypt, respectively, regarding their inclusion in the Southern Corridor.

Then, in July of 2009, Ankara hosted the signing ceremony of the intergovernmental agreement (IGA) of the five transit states of Nabucco. Conspicuously, though, the producer states were not present. The ratification process of the IGA ended on March 4, 2010, when the Turkish parliament ratified it. The next stage will consist in the negotiation of separate project support agreements between the Nabucco consortium and each of the transit states (Kardas, 2010). Nonetheless, for several reasons, the advancement of the Southern Corridor is still beset with obstacles and uncertainties, due both to lackluster EU political and economic involvement and to the deterring effect of the competing Russian project, South Stream.

South Stream AG is a joint venture of Gazprom and the Italian company Eni SpA (each holding 50% of the shares, cf. www.southstream.ch) planning to lay down 900 km of pipeline on the Black Sea's seabed, from Beregovaya (Russia) to Varna (Bulgaria). According to South Stream's official website, two possible routes are under consideration regarding the pipeline's onshore route from Varna (cf. www.south-stream.info): a northwestwards-going branch, to Serbia, Hungary, Slovenia and Austria, and a southwestwards-going branch, to Greece and southern Italy, via a marine interconnector. The project was publicly announced in June 2007 and since then it has made several important steps toward inhibiting its archrival, Nabucco. On January 25, 2008, both Serbia and Hungary ratified the intergovernmental agreements with Russia to build the respective sections of the pipeline, plus a large gas storage center near Banatski Dvor, in Serbia. The Bulgarian Parliament ratified the agreement in July 2008, while Greece and Russia signed one in April of 2008. On November 14, 2009, Slovenia joined the South Stream project, thus providing it with the missing link for the northern branch.

On November 11 in Moscow, in a joint statement, the Austrian Chancellor Werner Faymann and the Russian Prime Minister Vladimir Putin emphasized the need for Austria to join South Stream (upi.com, 2009). Also, on November 27, 2009, during Prime Minister Putin's visit to France, Electricité de France (EDF) joined the South Stream consortium. EDF's participation is expected to border on 10% (Vidalon, 2009). Also significant was that immediately after the signing of Nabucco's intergovernmental agreement in Ankara, Turkey accepted that Russia lays down the South Stream line on the Turkish seabed – thus avoiding the Ukrainian economic zone – in return for the planned construction of an oil transport system linking Novorossiysk to the Black Sea port of Samsun and centering around a new oil pipeline across Anatolia, from Samsun to the Mediterranean port of Ceyhan – as part of Ankara's strategy of turning Ceyhan in the world's biggest energy hub (Socor, 2009b).

Finally, after meeting with Vladimir Putin in Moscow, Croatia's Prime Minister Jadranka Kosor announced her country would join the South Stream project (Stratfor, 2010). As shall be shown in section 5, Croatia's location on the coast of the Adriatic Sea is of strategic importance to Russia, particularly in light of Zagreb's plan to build an LNG regasification terminal on the Krk Island.

Other than its obvious diplomatic and formal success, South Stream is a hugely difficult enterprise. The debit of the offshore section of the line was boosted from initially 31 bcm/year to no less than 61 bcm/year (*dpa*, 2009), at a prohibiting cost of about €24 billion, according to Gazprom's own estimate; this would make it the world's most expensive pipeline (Socor, 2009a). It is unlikely that this kind of investment will take place, given Gazprom's excessive delivery commitments – all the more now, after the commissioning of the Central Asia-China pipeline, which left Gazprom with limited sources of Caspian gas.

In 2007, at the inception date of South Stream, the large inflows of money to Russia due to the high price of oil and gas, along with Moscow's monopsony position regarding the gas extracted in Turkmenistan and Kazakhstan may have justified Gazprom's and Eni's robust belief that their joint venture would materialize. Yet if this has ever been the case, the current economic context has fundamentally decoupled the flurry of political and business negotiations surrounding South Stream from its material substance. It is now actually very probable that South Stream is a mere "paper tiger," whose true rationale is to undermine trust and discourage investments in the Nabucco project, as well as to bring into submission "rebellious" transit states, such as Ukraine.

It is actually revealing that ENI's CEO, Paolo Scaroni, has recently suggested a partial merger of the South Stream and Nabucco pipeline routes, on the Bulgaria-Austria segment – although Nabucco's route is already well defined, and different from South Stream's tentative northern branch. "Should all partners decide to merge the two pipelines for part of the route, we would reduce investments, operational costs and increase overall returns," said Scaroni, quoted by Bloomberg.com (Martinez and Resnick-Ault, 2010). Yet it is probable that Scaroni's statement connotes his skepticism that investments and gas quantities of the scale needed by South Stream will ever be in place. Taking an unwavering stance, Moscow promptly dismissed Scaroni's call through the Energy Minister Sergei Shmatko, who declared that South Stream was "more competitive" than Nabucco (Shiryaevskaya, 2010).

By cunningly promising all the participant countries the status of an energy hub, Gazprom relied on a strategy of *divide et impera*, to the success of which also contributed EU's half-hearted support of Nabucco. Indeed, a recent setback of the Nabucco project was the announcement of the delay to the fourth quarter of 2010 of its European allocation of financial support, initially anticipated to be arranged in January of 2010 (Renauld, 2009: 7). Yet by far the most pressing obstacle for Nabucco at the moment is the dispute between Azerbaijan and Turkey regarding transit revenues and gas pricing for Azerbaijani gas transiting Turkey to fill the

Turkey-Greece-Italy Interconnector. This adds to Ankara's insistence on having a reserved quota of up to 15% of the Nabucco transit at deeply discounted prices.

President Ilham Aliyev of Azerbaijan made public his country's dissatisfaction with Ankara's tactics on October 21, 2009, while chairing an expanded session of the government. According to Aliyev, Ankara has been paying merely one third of the average European price for Azerbaijani gas in recent years (Socor, 2009d). Under a bilateral agreement signed in 2002, Turkey bought gas from Azerbaijan at $120 per one thousand cubic meters (tcm). That agreement expired in April 2007, along with any justification for the low price, but Ankara has stonewalled the negotiations on a new price, just continuing to pay the same and bargaining for slight increments. For the approximately 7 bmc/year that it imports from Azerbaijan, Turkey pays less than 50% of what it offers for the Russian gas coming through the Blue Stream pipeline (Socor, 2009c). Also according to Aliyev, Ankara insists on charging transit fees that are 70% higher than those charged by other transit states on the Nabucco route. These facts inhibit the development of the Azerbaijani Shah Deniz gas field, earmarked to feed into Nabucco. The start of its commercial production has already been delayed by two years, being now scheduled for 2015.

In the face of it, Azerbaijan was compelled to contemplate other export options. On November 20, State Oil Company of Azerbaijan's (SOCAR) President Rovnag Abdullayev declared that his country was seriously considering exports to China (Petersen, 2009a). This, on the one hand, was prompted by the approaching opening of the Central Asia-China pipeline, which has been agreed upon and constructed in a much more expedient and uncomplicated manner. On the other hand, it has certainly been a message pointed at the Nabucco consortium and at the European governments involved that they coordinate with Turkey and come out with a clear offer to the Caspian producers.

However, the possibility that Azerbaijan drastically reorients its exports strategy – to the East instead of the West – is remote. The reasons are aptly enumerated by Petersen (2009a): first, because of the inherent technical difficulties related to a supplementary extension of the China pipeline, already set to be the longest in the world; second, because that would require Turkmenistan's cooperation, which is difficult to obtain against the background of the ongoing dispute between the two states about the Serdar/Kyapaz gas field in the Caspian Sea; third – and most important – because such a reorientation would have Azerbaijan give up its geostrategic position as a gateway to the westward flows of Caspian hydrocarbons. That key advantage would be completely lost if Baku stood last in the queue, looking toward Beijing.

It is much easier for Azerbaijan to increase its exports on the north-south axis – that is, to Russia and Iran, respectively. Gazprom has long offered to buy up the entire gas production of Azerbaijan, for its North Caucasus market and for further exports to the EU, an offer which Baku has so far resisted. In October of 2009, however, an agreement was signed by which starting January 1, 2010, Azerbaijan exports 500

million cubic meter/year of gas to Russia. Interestingly, the price seems to the similar to the European netback and re-export is precluded by a specific clause. While this is a small quantity, the agreement includes an increase option. For the moment, though, the agreement is primarily a wake-up call to the Nabucco consortium.

The gas supply agreement corroborates with a more general growth of political influence of Moscow over Baku, going as far as Azerbaijan's consideration of membership in the Collective Security Treaty Organization (CSTO) (Stratfor, 2009a). Two reasons stand out for such a move: (i) Baku's effort to obtain Moscow's parity of treatment with Armenia (an old military ally of Russia) in relation to the Nagorno-Karabakh conflict; (ii) Baku's disillusionment with the "normalization" negotiations between Armenia and Turkey, which Azerbaijan perceives as a betrayal by its *aga bey*, Turkey.

Importantly, for its north and south gas export options, Azerbaijan does not depend on other transit countries and does not need new pipelines. Soviet-era pipeline connections to both Russia and Iran are in place and only need modernization, adding up to 10 bmc/year – enough to accommodate Azerbaijan's surpluses for the next years, in case Nabucco falters.

Finally, during the October 16, 2009 session of the government, President Aliyev alluded to the proposition of a new pipeline project as an alternative export option: White Stream, which is supposed to deliver gas from Azerbaijan via Georgia and the Black Sea seabed to Romania – unlike the previous version of the project, which would have run to Crimea (Socor, 2009d). White Stream thus fits into the Southern Corridor concept. A bit more precisely, White Stream is currently thought of as branching off from the Baku-Tbilisi-Erzurum (BTE) pipeline towards the port of Supsa and as continuing from there on the Black Sea seabed 1,100 kilometers to Constanta, where it would connect to the Romanian transmission system. The total planned capacity is 32 bcm/year. According to the general manager of the White Stream consortium, Roberto Pirani, the company hopes to sign a project agreement in 2010, to complete the design work by 2011, to obtain an investment decision by 2012, to start construction by 2013 and to see the first gas flowing by 2016 (Socor, 2009e).

Aliyev discussed the new White Stream proposal with the Romanian President Traian Băsescu during his visit to Bucharest in late September of 2009, where the two leaders signed a strategic partnership agreement. They also considered the possibility of developing an LNG system as a possible alternative solution for the export of Azerbaijani gas via the Black Sea, which would involve liquefaction in a Georgian port and regasification in Constanta. But of course, whether at the end of the day the delays in the Nabucco project would push Azerbaijan toward a non-Turkish option, the choice between White Stream and LNG – or other alternatives altogether – would have to be grounded in a comparative cost-benefit analysis.

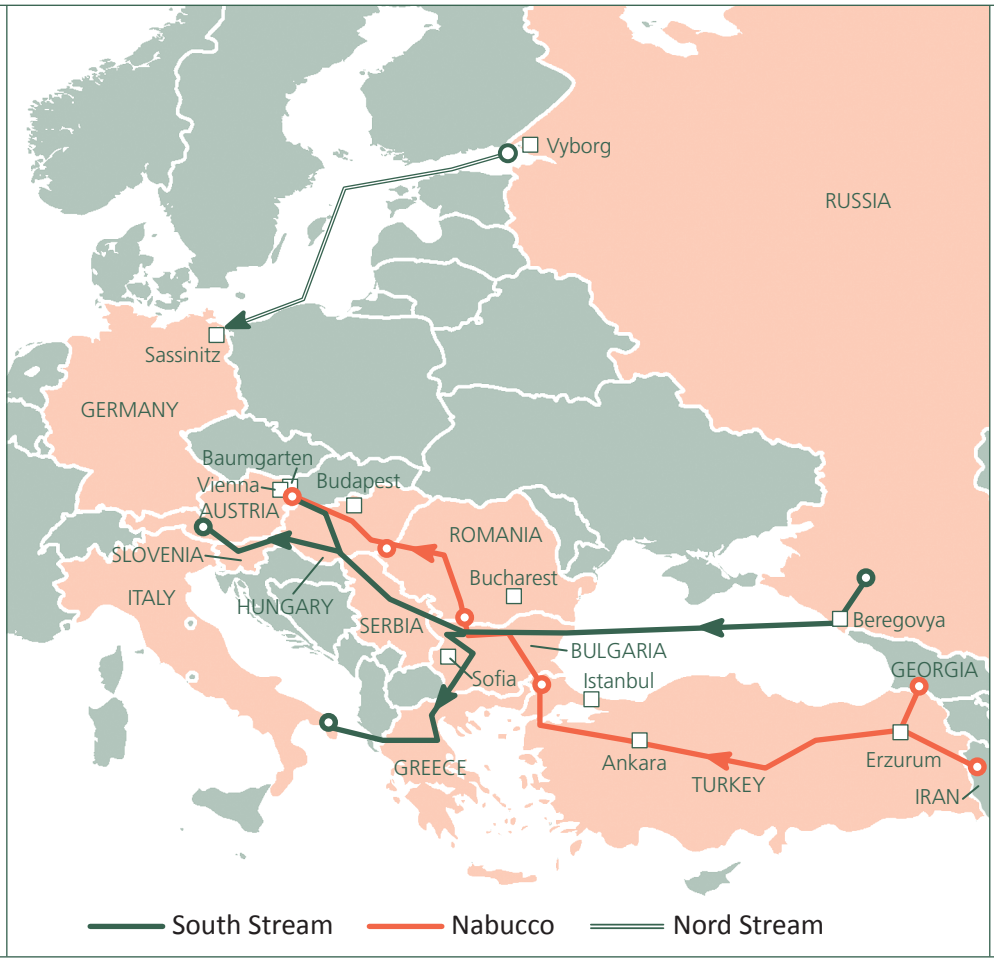
Following the July 2009 signing ceremony of Nabucco's IGA, the Iraqi prime-minister Nouri al-Maliki stated in Istanbul his country's willingness and capacity

to contribute up to 15 bcm/y of gas to the Europe-bound pipeline (Kardas, 2009). Moreover, two companies of the Nabucco consortium – OMV and MOL – have recently invested in gas production in Iraq's Kurdistan. Thus, given the tensions between Baku and Ankara, it is not unlikely that Nabucco's first phase will be fueled from the Middle East, rather than the Caspian region. As pointed out by Petersen (2009a), "[w]hile the plan is still to link Azerbaijan's Shah Deniz II gas into Nabucco's first phase (to fill about half of the pipeline's eventual capacity), more supplies may well be available from gas-rich northern Iraq in five years' time, and the possibility that Egyptian gas could be linked to Nabucco is increasingly gaining credence after it was first mentioned publically by Cairo in July."

## 3 NORD STREAM

*Nord Stream* is the name of the Russo-German project of a Baltic offshore gas pipeline planned to link Vyborg with Greifswald. The pipeline would run for 1,200 kilometers and would consist of two twin lines, each of a capacity of 27.5 bmc/year.

**Picture 1:** Projected Routes of Nord Stream, Nabucco and South Stream Pipelines




Source: http://www.energy.eu/images/pipelines_nabucco_nord_south_stream.gif

Construction work is due to start in the late spring of 2010, so as to finish the first line by late 2011. The second line would be built from 2012 to 2014. Thus, the full throughput capacity of 55 bcm/year ought to be reached by 2015. The costs are estimated at €7.5 billion (Flauger, 2009). The shareholders of the Nord Stream AG consortium are Gazprom with 51%, BASF (through its gas-trading subsidiary, Wintershall) with 20%, E.ON Ruhrgas with 20%, and Netherlands' Gasunie with 9%. Following an agreement reached in March 2010 by Presidents Medvedev and Sarkozy in Paris, Gaz de France is also expected to join the consortium, receiving a 9% stake of the shares through corresponding reductions in the stakes of the German partners, so as to leave Gazprom with the control majority of 51% (Socor, 2010c).

The agreement on the construction of Nord Stream was signed on September 8, 2005, during the final days in office of Chancellor Gerhard Schroeder, who thereafter became head of the shareholders' committee. His successor, Chancellor Angela Merkel, lobbied for the inclusion of Nord Stream among EU's projects of interest, lumping it together with Nabucco and South Stream for "collectively contributing" to Europe's security of supply (upstreamonline.com, 2009).

This very proposition is telling of a deep-going difference in the way Germany understands its energy security needs and the way other EU member states, particularly from Eastern Europe, conceive of them. After all, Nord Stream has from its inception been surrounded by political controversy. In Warsaw, the project is nicknamed "The Molotov-Ribbentrop Pipeline," after the 1939 Soviet-Nazi deal for the partition of Poland (Petersen, 2009c). The Baltic countries have the same feeling and cannot understand the plan of laying down such an expensive offshore construction when it would have been much cheaper to build it onshore through Eastern Europe, other than as a deliberate exclusion by Moscow of countries that it still considers as part of its sphere of influence. Moscow thus shows the willingness to incur huge economic costs out of mistrust in its former socialist brethren, while the latter fear that once Gazprom has secured direct access to its "golden hen" – the German market – their own energy security would be at risk, for reasons both economic and political.

The German rationale for this deal seems to stem from worries that the Russian gas reserves will not suffice to cover the growing European demand of the coming years; thence the willingness to secure as much of the available Russian reserves of gas, even at the risk of a dangerous dependence – at almost 40% of the annual consumption, with a similar percentage for oil. The German conception of solidarity in the European energy policy has prioritized the need to interconnect the pipeline networks of the EU states. This will indeed be an important step and will certainly be helped by the creation of the new Agency for the Cooperation of Energy Regulator (ACER) of the EU (Goldirova, 2009). Nevertheless, the bilateral energy deals closed by a few powerful European states with Russia are profoundly detrimental to any sense of a common European energy policy. Along with Germany, Italy is supposed to provide government guarantees for Nord Stream, in return for massive business contracts given to Italian firms designated to participate in the construction of the

line and in the manufacturing of the steel pipes. It is important that we notice the difference in type and motivation among the actors involved in the European energy game. The situation is well described by Socor (2009g):

Italy's involvement with Nord Stream underscores the emergence of a tripartite, Russo-German-Italian pipeline alliance to outflank Europe through the Nord Stream and South Stream projects. In this grouping, Russia alone operates as a state actor with integrated economic and political strategies. The German actors are interest groups driven by compartmentalized business strategies, though capable of influencing the government; while the Italian participants are companies linked with Moscow-friendly Silvio Berlusconi's government.

Be it as it may, four years after the signing of the construction agreement, the Nord Stream project received the Scandinavian countries' "green light," i.e. environmental permissions to the consortium to lay the pipeline through their respective economic zones of the Baltic seabed. Denmark had given it in late October, followed by the Finnish and Swedish governments on November 5, 2009. The Russian environment authority, Rosprirodnadzor, gave its approval on December 18, followed on December 28 by the permission of the German Federal Maritime and Hydrographic Agency. Still pending is a second Finish permission, to be granted by an independent environment agency (Stratmann, 2009; Rettman, 2009). Thus, all seems to be set for the first pipeline segments to be laid on the Baltic seabed starting in the late spring of 2010. The logistical preparations have been underway for years now, since the plan has it that by the start of the construction work no less than one third of the steel pipeline should be ready, covered in concrete (Runner, 2009; Russland-Aktuell, 2009).

Nord Stream's dedicated gas field has been right from the start Yuzhno-Russkoye, located in the Yamal-Nenets Autonomous Area, up north above the Arctic Circle – thus making the name Yuzhno ("south" in Russian) a misnomer. According to the consortium's own data, the proven reserves of the field exceed 700 bmc, with a yearly yield of about 25 bcm (nord-stream.com, 2009). As this yearly debit barely suffices to fill in even the first line of Nord Stream, Gazprom mentions as a supplementary source the Shtokman supergiant gas field, offshore in the Barents Sea.

The Shtokman field has estimated reserves of 3.2 trillion cubic meters (Tcm) (offshore technology.com, 2009). It lies 550 kilometers off from land, at a depth of 350 meters. More technical detail is telling of the exceedingly difficult conditions of exploitation: "The field covers an area of 1,400m² and lies inside the arctic. It is subject to icebergs of up to 1 million tons drifting at up to 0.25m/s, and 1.2m drift ice moving at up to 1m/s" (offshore-technology.com, 2009). Accordingly, the estimated development costs are huge: anywhere between $10 and $25 billion. Such hostile conditions require advanced technological know-how and financial power, which only the global players of the energy business can bring. To this purpose, Gazprom has invited Norway's StatoilHydro and France's Total as partners to develop Shtokman,

but uncertainties regarding the transfer of technologies to Russia have so far hindered the conclusion of an agreement. Thus, it is improbable that Shtokman will enter commercial production before 2020 (Socor, 2009g), which is late for Nord Stream. Besides, Shtokman has also been earmarked for LNG production, especially for the North American market.

The website of the Nord Stream consortium also mentions "additional gas fields from the Yamal Peninsula" (nord-stream.com), but the extremely rough conditions and the special technologies needed for constructions on permafrost make development difficult and very expensive. And, although Yamal's deposits are immense, potential top investors are rather hesitant to accept Gazprom's terms for partnership.

Indeed, at the meeting of Vladimir Putin with the top managers of the world's largest energy companies in Salekhard on September 24, 2009, aiming at developing Yamal's deposits for the LNG market, they responded with reticence to Putin's terms about technology transfers to Russia, in exchange for their being allowed to "access" those gas resources (Vedomosti, 2009). Apart from the onerous terms of this particular offer, the reluctance of Western companies has also to do with Royal Dutch Shell's experience in Sakhalin, where it developed the Sakhalin II field – currently Russia's single LNG project on stream – only to be forced by the Russian state to sell part of its majority stake along with its operation rights to Gazprom, in 2006-2007, at a heavily underestimated price. The risk is adamantly depicted by Mikhail Korchemkin, head of the East European Gas Analysis consultancy: "When Russia needs money and technology, it invites foreign partners. But when the project is ready to yield money, investors may be forced into such unbearable conditions that they will be happy to sell their stakes" (Vedomosti, 2009).

## 4 LNG AND UNCONVENTIONAL GAS DEVELOPMENTS

The European market of natural gas certainly does not reduce to pipelines, and the Caspian gas is certainly not the unique stake of the game. Investments in other technologies are likely to seriously alter the landscape of natural gas economics in Europe.

LNG, for instance, which reached a peak in global demand in 2008 and has since seen a relative recession, continues to unfold in Europe. The Gate Terminal in Rotterdam, currently in construction, will have a capacity of 12 bcm/year (offshore-technology.com, 2009). LNG currently represents approximately 8% of the world's total natural gas trade (Stratfor, 2009b). Since 2004 there has been an investment boom in LNG shipping capacity. The number of LNG tankers increased from about 150 at the end of 2003 to more than 300 today (offshore-technology.com, 30. Apr. 2009). Russia has just started to play in this league with the opening of its terminal on the Sakhalin Island, but fathoms the ambition of becoming world leader through the development of the mentioned northern fields of Shtokman and Yamal.

**Picture 2:** White Stream Route options Option 1: Georgia/Crimea/ Romania, Option 2: Georgia to Romania Direct.


Source: http://www.rense.com/general87/image003%2012.jpg

An important European project is the regasification terminal of the Adria LNG consortium in Omisalj, on Croatia's Krk Island, intended to receive Middle Eastern LNG. The terminal will have an initial capacity of 10 bmc/year, which will increase to 15 bcm/year. Construction work is due to begin in 2010 and the project is due to be functional in 2014, at a cost of about €800 million – without pipeline connections (OilVoice, 2008). The Croatian public opinion had been rather reticent about this project, mainly due to safety and environmental concerns, but again, the Russo-Ukrainian gas spat did obviously spurt public support for the Adria LNG project. The Krk terminal will provide natural gas not only to Croatia (which has a total demand of 3.2 bcm/year), but also to Italy, Austria, Hungary, Romania and Slovenia (Ilic, 2009a). To this purpose, Plinacro, the Croatian natural gas transmission operator, signed on March 3, 2009 an agreement with MOL's subsidiary, FGSZ Zrt, for the construction of a 294 kilometer long gas interconnector between Croatia and Hungary, with a capacity of 6.5 bcm/year (Ilic, 2009b).

Russia has recently made a couple of major business propositions to Croatia in the energy sector, on the occasion of President Stjepan Mesic's visit to Moscow, on December 13-14 (Socor, 2009l). In the oil sector, Lukoil and GazpromNeft intend to acquire stakes in the Adriatic Oil Pipeline (JANAF), which runs from Omisalj to northern Hungary. The Russian government has long sought to reverse the pipeline's

direction, so as to use it for Russian oil exports over the Adriatic Sea. In the gas sector, Moscow proposes to build an extension of the South Stream pipeline through Croatia. Gazprom has asked to use the existing in-country transmission pipelines in the context of South Stream, including the above mentioned Plinacro interconnector toward Hungary. This would prevent the use of the interconnector for EU-backed projects, such as the New European Transmission System (NETS) – proposed by MOL and conceived to create a common gas transmission system operator in Central and South Eastern Europe – or Nabucco; but it would also cut off an important prospective link of Adria LNG. In effect, should Gazprom enter Croatia through South Stream, it would likely press for halting the Krk Island LNG project altogether (Socor, 2009l), since the Qatari LNG thus shipped in would stand in direct competition with the South Stream gas.

Unconventional natural gas development has the potential to be a game-changer in the European gas business. Typically, unconventional gas refers to pockets of natural gas "trapped" in shale rocks, from which it can be "freed" using a new drilling technology, called hydraulic fracturing, also known as "fracing." The high energy prices of the years up to 2008 led to sustained investment in companies tapping into sources otherwise considered too expensive or inaccessible to develop. The biggest player in this new field is the giant energy company ExxonMobil, which has been drilling for "tight gas" on hundreds of thousands of acres in North America, in Colorado and British Columbia. In Europe, ExxonMobil entered in April 2008 a joint venture with a little known company American company, Falcon Oil and Gas Ltd., which had a production license from the Hungarian government for more than 245,000 acres of the Mako Trough gas reservoirs, in South-Eastern Hungary, near the Romanian border.

Those reserves are very hard to access – 7,000 meters deep and at high temperature – but immense. According to Falcon, "its license area alone contains a resource of some 44 trillion cubic feet of gas. That is three times as large as Britain's proven gas reserves" (WSJ, 2008). It does indeed cost billions to produce gas from fields of this sort, but the gains can be huge. So much so that ExxonMobil, the world's largest energy company, completely ignored the Eurasian pipeline game (Petersen, 2009a).

## Conclusion

The discussed projects of gas pipelines play a defining role in shaping the strategic environment of the energy security relationship between Russia, Europe, and the countries in between. Energy politics is a key factor in Moscow's foreign policy. It is not only about securing demand for Russia's most valuable exports – hydrocarbons – but also about the political and economic control of a number of strategically important states in its vicinity.

The development of oil and gas fields in the Caspian basin in the 1990s and the construction of the BTE and BTC pipelines from Azerbaijan to Turkey in the 2000s – with substantive political and economic American involvement – sparked off a

competitive geopolitical game in the Black Sea and Caspian region for the control and transport of those resources. Turkey, in particular, situated at the crossroads of all routes of natural gas from southern Russia, the Caspian region and the Middle East toward Europe, turned into a true – potentially giant – energy hub. Using the existing South Caucasian transit corridor that goes from Azerbaijan to Turkey via Georgia, the Nabucco gas pipeline project is the Western attempt to achieve a degree (albeit modest) of independence of supply from Russia. The concept is to continue the current Baku-Tbilisi-Erzurum (BTE) pipeline all the way to Vienna via Turkey and Eastern Europe. Moscow's response has been South Stream, an excessively costly enterprise with uncertain sources of gas, whose apparent role has been to undermine Nabucco and to discourage Ukraine, as a key transit state, from leveraging its geographic advantage in negotiations with Russia.

Accordingly, Russia adopted a strategy of building pipelines in "surplus capacity," in order to avoid dependence on any particular transit country. Nord Stream is also a case in point: conceived to transfer gas directly from Russia to Germany underneath the Baltic Sea, the project of this pipeline is deeply resented by Poland and the Baltic countries.

Indeed, despite the strategic principles of energy security laid down in Brussels to increase EU's overall energy security, the different interests, situations and perceptions of the European states regarding the "pipelines game" have led to an aggregate dissociated energy policy – basically a result of a natural economic nationalism enhanced by Moscow's crafty divide and impera policies.

I have argued that alternative technologies for extracting natural gas – the so-called "fracing" of shale rocks – already introduced in Europe, as well as the significant investments in LNG facilities (which are themselves a bone of contention with Gazprom, such as in Croatia) have the potential to change the structure of the natural gas market within the EU. Considering also the difficulties of sustaining massive investments in the current economic context, the entire "new pipelines game" may well fall behind the curve in the next years.

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