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Caspian Gas, TANAP and TAP in Europe's Energy Security

by Ariel Cohen

ABSTRACT

Russia's occupation of the Crimea and possible incorporation of Eastern Ukrainian regions demonstrated Europe's vulnerability to Gazprom's energy power. Whatever the EU's reactions, diversification of energy supply to diminish Russia's market share is likely to be one of them. TAP is one step towards the strategic goal of diminishing Gazprom's huge presence in Europe. But in view of the proposed construction of the Russian South Stream, how could Central Europe, and especially Bulgaria, Romania, Austria and Lithuania, ensure energy diversification? What next for the Southern Corridor? Is Russia going to accept and tolerate infrastructure growth of the Caspian and other competitors south of its borders?

Caspian region | *Natural gas* | *Pipelines* | *Russia* | *European Union* | *Energy security*

keywords

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1. Europe's stagnating demand for gas

The European gas demand has been stagnating since 2010, when it peaked as a result of a colder winter than usual. Analysts do not foresee any significant growth in the future gas consumption in Europe. According to the European Commission, the EU consumed around 530 billion cubic meters (bcm) of gas in 2010.[1] Its consumption is expected to remain relatively unchanged through 2020 and fall slightly by 2030.[2] According to the Energy Information Agency (EIA), the natural gas consumption of the OECD countries of Europe is expected to increase slightly, to 578 bcm (20.4 tcf) in 2020 and 588 bcm (20.8 tcf) in 2025, compared to 560 bcm (19.8 tcf) in 2010.[3]

At least until 2020, the European gas demand is unlikely to increase significantly due to a weak (if any) economic recovery in gas-intensive European industry sectors, together with improved insulation of apartment buildings and more efficient using of renewable energy sources all across the continent.[4] In addition, cheap natural gas in North American markets pushes out coal, which is being imported to Europe in greater volumes and at a lower price than in the past. These US coal exports further tighten the European gas market and make the prospect of an increase in

[1] Eurogas preliminary estimates for 2013 put gas consumption in the EU28 at 462 billion cubic meters (bcm). Eurogas, "Drop in 2013 EU gas demand emphasises need for swift change", in *Eurogas Press Releases*, 18 March 2014, http://www.eurogas.org/uploads/media/Eurogas_Press_Release_-_Drop_in_2013_EU_gas_demand_emphasises_need_for_swift_change.pdf.

[2] Mott MacDonald, *Supplying the EU Natural Gas Market*, November 2010, p. 7, http://ec.europa.eu/energy/international/studies/doc/2010_11_supplying_eu_gas_market.pdf.

[3] US Energy Information Administration (EIA), "Natural gas", in *International Energy Outlook 2013*, 25 July 2013, http://www.eia.gov/forecasts/ieo/nat_gas.cfm.

[4] Mott MacDonald, *Supplying the EU Natural Gas Market*, cit., p. 7.

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the EU gas demand even slimmer.[5]

In contrast, the global natural gas trends, predicted by the IEA in the *World Energy Outlook*, are expected to be different from those in Europe. In particular, the IEA forecasts a stable growth of the global natural gas demand by 1.6% per year through 2035.[6]

2. The evolving European dependency on Russian gas

Europe, especially Central and Eastern Europe, has been dependent on Russian gas for a long time. Russia enjoys a de facto monopoly on gas supplies to the Baltic States, Slovakia, Moldova or Bulgaria, to name just a few. However, in the past, Russia has repeatedly proven itself to be a somewhat unreliable gas supplier that does not hesitate to use its exclusive position to put pressure on its Eastern European customers and use it as a leverage to discourage them to pursue "anti-Russian" policies.

Countries such as Ukraine and Moldova suffer from a high price of gas imported from Russia, which makes it relatively easy for the Kremlin to manipulate the public opinion in these countries. High prices create a group of influential intermediaries (e.g. Dmytro Firtash, recently arrested in Vienna) and other oligarchs who are dependent on Moscow in energy-intensive sectors.

Threatening to raise the prices of such a sensitive good to Western European market levels is a powerful tool. It has proven to work as recently as in November 2013, when Moldova saw protests against joining the free trade area with the EU, and one of the sources of fear was that Russia could raise its gas prices for the country.

3. The EU finding ways to break free from Russia's grip

In early 2009, several Central European countries and the East Balkans became hostage to a dispute between Russia and Ukraine, when Russia accused its western neighbor of syphoning gas destined for the EU and temporarily cut off its gas supplies to and through Ukraine.[7] As a result, the affected economies were losing hundreds of millions of Euros per day due to closed heavy industry facilities that require a stable supply of gas.

[5] Guy Chazan and Gerrit Wiesmann, "Shale gas boom sparks EU coal revival", in *Financial Times*, 3 February 2013, http://www.ft.com/cms/s/0/d41c2e8a-6c8d-11e2-953f-00144feab49a.html.

[6] Ernst & Young, *Global LNG: Will new demand and new supply mean new pricing?*, March 2013, http://www.ey.com/GL/en/Industries/Oil---Gas/Global-LNG--New-pricing-ahead---LNG-demand-growth.

[7] Andrew E. Kramer, "Russia Cuts Off Gas Deliveries to Ukraine", in *The New York Times*, 1 January 2009, http://www.nytimes.com/2009/01/02/world/europe/02gazprom.html.

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To prevent gas crises from happening again, and to diversify the European Union's sources of gas, some EU countries have proposed a series of projects that would supply Central Asian and Caspian gas to Europe from and through countries that have fewer incentives and tools to pressure the EU than Russia.

Some of the proposed projects that are expected to make the EU more independent of Russia's gas supplies include Nabucco-West, the Trans Adriatic Pipeline (TAP, connecting Greece, Albania and Italy), and the Trans Anatolian Pipeline (TANAP, connecting Georgia and Greece through Turkey). TANAP, in turn, is planned to be connected to the already operational South Caucasus Pipeline, supplying Turkey and Georgia with gas from the Caspian Basin. One may add the proposed pipelines from Iraqi Kurdistan to Turkey and the development of offshore gas that could be exported to Europe from the Eastern Mediterranean (Israel and Cyprus) as LNG.

However, construction has not yet begun on any of these pipelines. The construction of TANAP will start in early 2014, though even the exact date is not yet certain.[8] The construction of TAP is planned to start in 2015, and the pipeline is expected to become operational by 2019.[9]

These projects will be beneficial to both sides of the supply chain. Gas-rich countries such as Azerbaijan are eager to participate in building gas pipelines that will allow them to ship gas directly to end consumers in Europe, bypassing Russia. This is especially important for Azerbaijan, which is trying to conduct more independent foreign policy than most of the other former Soviet Union countries, excluding the Baltic States. Baku feels constrained by increasing and multifaceted Russian influence, the West's geopolitical apathy, and continuous European and American criticism of human rights violations. These pipeline projects are also likely to create a strategic energy partnership between Azerbaijan and Europe, take a step towards complementing Russia's quasi-monopolistic position in Europe, and make it somewhat more difficult for the Kremlin to dominate the gas market in the EU.

Matthew Bryza, former US Ambassador to Azerbaijan, advocates for the construction of a submarine pipeline from Israel to Turkey, which would carry exported gas from the to-be-developed Israeli offshore Leviathan field.[10] He argues that the economically viable pipeline might be a catalyst for improving the relations between Israel and Turkey, and also between Turkey and Cyprus. However, Turkey's ruling AK party and Prime Minister Recep Tayyip Erdoğan seem to be an insurmountable obstacle to the project for now. Since he took office in 2003,

[8] Azerbaijan Presidency, *Ilham Aliyev and Turkish Prime Minister Recep Tayyip Erdogan have held a press conference*, 13 November 2013, http://en.president.az/articles/10056.

[9] TAP, *Project Schedule*, updated 27 January 2014, http://www.trans-adriatic-pipeline.com/tap-project/project-plan.

[10] Matthew Bryza, "Israel-Turkey Pipeline Can Fix Eastern Mediterranean", in *BloombergView*, 20 January 2014, http://www.bloombergview.com/articles/2014-01-20/israel-turkey-pipeline-can-fix-eastern-mediterranean.

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Erdoğan gained widespread popularity in the Arab world for his systematic anti-Israeli positions. He recently said that normalization of the ties with Israel, which seriously deteriorated after the Mavi Marmara incident of 2010, is only possible if Jerusalem lifts the siege over the Gaza Strip. Erdoğan's anti-Israeli stance is now likely to harden further after his party won the March 2014 municipal elections.[11] In the meantime, Israel has no intention of ending the blockade of Gaza anytime soon, although it expressed its willingness to allow Turkish assistance to go through. Nevertheless, any kind of genuine normalization between Turkey and Israel and the building of the proposed pipeline remains unlikely.[12]

4. Gazprom's strategy in Europe

In the meantime, Russia and its gas giant Gazprom are not passively watching some of the former Soviet Union countries become its serious competitors and the EU try to break free from the Russian quasi-monopoly.

Gazprom is the only Russian company legally allowed by Russian law to export Russian natural gas through pipelines.[13] It has enjoyed a monopolistic position in many countries of Central and Eastern Europe, but its position is weakening. In 2012, Russia's imports accounted for only 34% of the EU gas consumption,[14] even though a number of countries in Eastern Europe import close to 100% of their gas from Russia. LNG imports from countries such as Qatar, Algeria and Nigeria allowed Europe to reduce its dependence on Russian gas from around 75% in 1990 to over 30% in 2012.[15] Nevertheless, Gazprom's ambitious goal is to increase its gas exports to Europe substantially, to 250 bcm per year by 2020[16] (compared to around 160 bcm in 2013[17]). However, taking into account the current political climate in Europe, these goals seem over-ambitious.

[11] Barak Ravid, "Turkey PM: No reconciliation with Israel until end of Gaza siege", in *Haaretz*, 11 February 2014, http://www.haaretz.com/news/diplomacy-defense/1.573771.

[12] Herb Keinon, "Erdogan likely to toughen position toward Israel if his party wins municipal elections", in *The Jerusalem Post*, 25 March 2014, http://www.jpost.com/Article.aspx?id=346464.

[13] "Russia's Putin approves LNG exports for Gazprom's rivals", in *Reuters*, 2 December 2013, http://www.reuters.com/article/2013/12/02/russia-lng-idUSL5N0JH0W420131202.

[14] Michael Ratner (ed.), "Europe's Energy Security: Options and Challenges to Natural Gas Supply Diversification", in *CRS Report for Congress*, No. R42405 (20 August 2013), p. 5, http://www.fas.org/sgp/crs/row/R42405.pdf.

[15] Pierre No, "The EU and Russia's gas", in *ECFR Commentaries*, 21 November 2008, http://ecfr.eu/content/entry/commentary_the_eu_and_russias_gas.

[16] Gazprom, *Gazprom Export*, http://www.gazprom.com/about/subsidiaries/list-items/gazprom-export.

[17] "Russia's Gazprom 2013 gas exports up 16% on year to 161.5 Bcm", in *Platts*, 20 December 2013, http://www.platts.com/latest-news/natural-gas/moscow/russias-gazprom-2013-gas-exports-up-16-on-yeaer-27779058.

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Gazprom used several main approaches to try to secure its dominant position in the European gas market:

- bypassing transit countries, such as Ukraine;
- vertically integrating itself into the European electricity production system, for instance in France;
- concluding long-term contracts with an oil-indexed gas price and the "take or pay" principle, and;
- using political influence over Russia's government to block alternative supply routes to Europe in order to maintain its monopolistic position in parts of the European market.

4.1. Bypassing transit countries

After a series of gas disputes with transit countries, such as Ukraine, one pillar of Gazprom's strategy is to bypass all possible transit countries and deliver gas directly to its end consumers in the EU. In 2011, Russia launched the first thread of the Nord Stream, delivering gas directly from Russia to its European customers - Germany, as well as France, Holland and eventually the UK, to which it plans to build supply spurs) - while bypassing Belarus and Ukraine. It is currently building the South Stream, with a projected capacity of 63 bcm.

Gazprom, together with its partners in the Balkans and Central Europe, launched construction of the South Stream project in 2012, which will transport gas directly from Russia through the Black Sea to its consumers in the Balkans and part of Central Europe, with plans to become operational in 2015.

For now, Russia does not suffer from capital shortages and does not hesitate to invest in construction of gas pipelines. However, Gazprom's financial position is deteriorating. The Russian giant gas company has created joint ventures with local gas corporations in the South Stream participant countries, owning around 50% of shares in each.[18] It is also willing to step in when its partners suffer from financial shortages. For instance, Gazprom offered to cover the full cost of building the Serbian section of the pipeline, after Serbia admitted it would have difficulties providing its share of the financing.[19] Serbia will repay its share of the investment by waiving transportation fees for the agreed-upon period. Moreover, Russia provided Serbia with a loan of $500 million, further securing its influence over the country.[20] A similar decision was made earlier in the case of Bulgaria.

[18] Gazprom, *South Stream*, http://www.gazprom.com/about/production/projects/pipelines/south-stream.

[19] Polina Stroganova, "Gazprom beryot finansirovaniye serbskogo uchastka 'Yuzhnogo potoka' na sebya" (Gazprom Is Taking Over Financing of the Serbian Section of the South Stream), in *RBC Daily*, 11 April 2013, http://rbcdaily.ru/industry/562949986528265; Russian Govt, *Talks between Dmitry Medvedev and Serbian Prime Minister and Minister of Internal Affairs Ivica Dačić*, 10 April 2013, http://archive.government.ru/eng/stens/23855.

[20] Ibid.

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While the economic justification of the South Stream is under question, the geopolitical one is not. However, there are doubts as to whether Russia will be able to produce enough gas to fully use the capacity of the South Stream, given that the Nord Stream currently operates only on about a half of its projected capacity. Nevertheless, the Russian South Stream still seems to be a massive investment project, as Russia may be seeking to outcompete the Nabucco-West pipeline. This Russian strategy seems to have worked. In June 2013, the Shah Deniz consortium selected TAP as the preferred option for the continuation of TANAP beyond the Turkey-Greece border.[21]

Russia's recent actions in Ukraine and the annexation of Crimea have cast a long shadow on Moscow's relationships with its European energy partners. This undermined trust is likely to hinder any future cooperation on the South Stream project. For instance, Paolo Scaroni, CEO of Italy's Eni, said that he sees the future of the project as "gloomy" because it may now become more difficult for Gazprom to obtain the large number of necessary authorizations from the European countries involved.[22]

The South Stream and the Southern Gas Corridor are projected to supply different European regions and will not be directly competing with each other for now. Thus, while Italy and Greece are likely to get more independent from Russia, the Balkans and Central and Eastern Europe will actually become less so.

With the Nord Stream already operational, and the South Stream becoming operational in 2015-2016 unless stopped, the risk that a large part of Europe may once again become hostage to a gas dispute between Russia and Ukraine may be lower. However, the Russian threat to Ukrainian independence disrupts more than just energy supply; the entire post-Cold War security order in Europe is challenged. South Stream is increasing some countries' dependence on Russia and falls short of meeting the EU objective of diversifying its gas supplies to the point where no country can use its supplies for political leverage.

4.2. Vertical integration in the European electricity production system

Another part of Gazprom's strategy is vertical integration, mostly in the European electricity production sector. For instance, Gazprom is trying to penetrate EU electricity generation markets through joint ventures with German and French energy companies.[23] In June 2012, Gazprom reached a deal with EDF to jointly

[21] TAP, *Shah Deniz Consortium selects the Trans Adriatic Pipeline (TAP) as European export pipeline*, 28 June 2013, https://www.trans-adriatic-pipeline.com/news/news/detail-view/article/414.

[22] "Future of South Stream pipeline 'gloomy' - Eni CEO", in *Reuters*, 20 March 2014, http://www.reuters.com/article/2014/03/20/ukraine-crisis-eni-southstream-idUSL6N0MH4M120140320.

[23] Jacob Gronholt-Pedersen, "Gazprom Pushing Into European Downstream Despite EU Probe",

invest in gas-fired power plants in Europe, while these power plants would use gas supplied exclusively from Gazprom.[24]

4.3. Concluding long-term contracts

Gazprom prefers to conclude long-term contracts with its partner companies, according to a so-called "take or pay" principle. This principle means that each contractor of Gazprom with such a contract is obliged to pay for an agreed-upon minimum amount of supplied gas, whether it consumes it or not.

Most of the long-term contracts Gazprom has signed with its partners expire in around 2025, which ensures Gazprom a prominent position in the European gas market for about a decade to come. According to Gazprom, such contracts are the basis of a stable and predictable gas supply, as they allow Gazprom to cover its vast investment in gas infrastructure.[25] Thus, the long-term contracts with guaranteed payments for gas, regardless of whether it is actually consumed or not, ensure a stable source of revenue for Gazprom in the years to come.

However, international partners of Gazprom, namely the German corporation RWE, have shown a great deal of discontent with the "take or pay" principle, especially after they became able to buy gas in the spot market. There has been a history of trade disputes between RWE and Gazprom about a series of provisions concerning the obligation of RWE to buy the minimum amounts of gas. For instance, the Czech branch of RWE, Transgas, successfully persuaded the arbitrage court in Vienna that it had the right to lower the amounts of gas bought from Gazprom.[26] After that, Gazprom turned to the Supreme Land Court of Vienna, where it lost. The lawsuit is to be examined by the Supreme Court of Austria.[27]

In light of these successful arbitrations and the growing number of potential gas sources in the European market, it will be increasingly difficult for Gazprom to continue implementing its old pricing policies, including the "take or pay" principle, in future gas contracts. Increased diversity of potential LNG supplies for Europe has led to a more competitive gas market, which has been gradually

in WSJ Blog *Emerging Europe*, 21 October 2011, http://blogs.wsj.com/emergingeurope/2011/10/21/gazprom-pushing-into-european-downstream-despite-eu-probe.

[24] Andrew E. Kramer and David Jolly, "Gazprom Reaches Deal With EDF to Invest in European Power Plants", in *The New York Times*, 22 June 2012, http://nyti.ms/MPimd7.

[25] Gazprom, *Europe*, http://www.gazprom.com/about/marketing/europe.

[26] "Gazprom otmenil pravilo 'beri ili plati' dlya vnutrennego rynka" (Gazprom Cancelled the Take or Pay Principle for the Domestic Market), in *Lenta.Ru*, 4 June 2013, http://lenta.ru/news/2013/06/04/take; Denis Pinchuk, "Gazprom makes concessions to Russian buyers as competition bites", in *Reuters*, 3 June 2013, http://www.reuters.com/article/2013/06/03/russia-gazprom-idUSL5N0EF3FJ20130603.

[27] "Gazprom pozhalovalsya na RWE v Verxovnyy sud Avstrii" (Gazprom Complained About RWE in the Supreme Court of Austria), in *RBC Daily*, 14 February 2014, http://top.rbc.ru/economics/14/02/2014/905299.shtml.

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depriving Gazprom of its traditional clout over Europe.[28] Thus, Gazprom is likely to base its future gas prices more on the spot market prices.

4.4. Blocking competition from Central Asia

One part of the Russian strategy to ensure a dominant position in the European gas market is to block gas from as many other potential suppliers as possible. In the case of Azerbaijan, this strategy is not working, as Azerbaijan is currently not supplying gas to Europe as a result of the still-lacking infrastructure in Turkey and the EU. However, with Central Asian countries, this strategy seems to be working well.

Part of Gazprom's strategy is to block transport of Caspian and Central Asian gas to Europe by routes other than through Russia. Gazprom has its own network of pipelines in Central Asian countries like Turkmenistan (such as the Central Asia-Center gas pipeline system), which allow it to import Central Asian gas and then re-export it further to Europe. Although the strategy itself is not as profitable as Gazprom producing the gas itself in Russia, due to its near-monopolistic position in a large part of the European gas market, Gazprom can make up for this loss by charging its European consumers higher prices than they would pay if they had direct access to Central Asian gas supplies. Thus, Gazprom's strategy in Central Asia is to buy as much gas as possible after China takes what it can, which will help the company to maintain and increase its share in the traditional European market.[29]

As part of the strategy to block the importing of gas from Central Asia, Russia (together with Iran) opposes and effectively blocks the construction of the proposed Trans Caspian pipeline, which would transport natural gas from Turkmenistan and other Central Asian countries (e.g. Uzbekistan) to Azerbaijan and further on to Turkey via Georgia through TANAP. The official Russian reason for blocking the construction of the pipeline is the unresolved legal status of the Caspian Sea. The unresolved status of maritime border demarcation between the Caspian countries allegedly requires all Caspian countries, including Russia, to approve such a project.

Theoretically, the pipeline can be built without Russia's green light.[30] However, the Russian position on the status of the Caspian Sea provides Putin with a potential excuse to threaten the use of force and meddle in the internal affairs of Caspian states if they proceed with building the pipeline, which is effectively preventing

[28] Stefan Schultz and Benjamin Bidder, "Under Pressure: Once Mighty Gazprom Loses Its Clout", in *Spiegel Online International*, 1 February 2013, http://spon.de/adRme.

[29] Gazprom, *Gas purchases*, http://www.gazprom.com/about/production/central-asia.

[30] Faik Medzhid, "Shaban: proyekt Transkaspiyskogo gazoprovoda predstavlyaet ugrozu energeticheskim interesam Rossii" (Shaban: The Trans Caspian Gas Pipeline Project Presents a Threat to Russia's Energy Interests), *Caucasian Knot*, 18 June 2012, http://www.kavkaz-uzel.ru/articles/208324.

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them from doing so.

Thus, a unilateral decision between Azerbaijan and Turkmenistan would be fraught with hostility and be met with an unpredictable response from Russia and Iran. In 2001, an Iranian vessel forced an Azerbaijani exploration ship to cease conducting geophysics (seismological) research in the Caspian Sea and return to the harbor. Similarly, Russia's most recent actions on the Crimean peninsula indicate that the Kremlin interprets international law in a "flexible" way, based on its geopolitical interests.

Strengthening Gazprom's position in the European market by blocking direct access of Central Asian gas to Europe via routes that bypass Russia not only tangibly increases Russia's political clout in the EU, but also reconfirms Russia's status as a crucial supplier of gas to some parts of Europe.

Blocking Central Asian supplies from routes bypassing Russia allows Gazprom to charge the Europeans higher prices than would exist otherwise if Central Asian gas enjoyed free competition and reached European markets.

However, even if this gas pipeline was constructed, its initial capacity would likely be around 10-20 bcm of Turkmen gas. From the long-term perspective, building a second and third thread of the pipeline would allow the pipeline to be expanded to a capacity, which would further tilt the markets away from Russia and undermine its dominant position.

While Russia seems to be able to successfully block Central Asian gas from reaching Europe directly, this is not the case with the Iraqi and Eastern Mediterranean sources. Gas produced in this region would not be transported through any of the post-Soviet countries, in which Russia is able to exercise substantial leverage. Instead, the gas would come through Turkey, which depends on Russian gas supplies but is an important regional power that is not susceptible to the kind of pressure Moscow is able to exert on some of the post-Soviet republics. Thus, the obstacle to production and export of Iraqi and Mediterranean gas is not Russia, but internal and regional political issues in Iraq and the Eastern Mediterranean.

Thus, the issue for Gazprom is not so much the Southern Corridor, composed of TANAP and TAP, but whether Europe in general, and the Southern Corridor in particular, would be supplied with sufficient amounts of non-Russian gas. It could be supplied from the current LNG sources, as well as from Iran's vast resources, Northern Iraq, the Eastern Mediterranean, and Central Asia through the Caspian Sea. However, due to the current leverage of Iran and Russian over the other post-Soviet Caspian countries, both scenarios seem unlikely.

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5. Potential alternative sources of natural gas for the South Stream: Iran, Iraq and Turkmenistan

Although the initial capacity of the Southern Corridor will be only 16 bcm, it could potentially be expanded to 20 bcm.[31] However, if TANAP does achieve this capacity, there is an issue of gas production volumes. Azerbaijan's own supplies from the Shah Deniz II gas field are relatively limited, as the field can only supply as little as 16 bcm annually, six bcm of which will be bought by Turkey.[32] There are plans for a third stage of the development of the field (Shah Deniz III) after 2025, which could supply up to an additional 25 bcm per year.[33] Other sources of gas for TANAP could potentially be countries like Turkmenistan, Iran or Iraq. However, each of these countries has its own issues that make their supplying of TANAP uncertain.

The maximum existing gas export capacity from Turkmenistan is now close to 100 bcm (3,500 bcf) per year,[34] significantly exceeding that of Azerbaijan. However, a pipeline that would be able to transport Turkmen gas to Europe, bypassing Russia, does not exist. As mentioned before, Turkmenistan has not been willing or able to build a pipeline that would transport Turkmen gas through the Caspian Sea to Azerbaijan due to its unresolved status. The idea of transporting gas through Iran is now unrealistic due to the Western sanctions imposed on the country, which prevent Iran from developing its vast gas reserves and building gas transportation infrastructure. However, if the sanctions on Iran are lifted, the possibility of Iranian gas reaching Europe would increase.

Moreover, Turkmenistan is now focusing on selling gas to the East, most importantly China. In particular, the Central Asia-China gas pipeline transports 30 bcm annually to China.[35]

Iran has the second-largest proven gas reserves in the world, after Russia. Iran's proven reserves are 33 trillion cubic meters (1,187 trillion cubic feet).[36] However, Iran

[31] Tora Leifland, *Opening the Southern Gas Corridor*, Presentation at the Platts 7th Annual European Gas Summit, Vienna, 19 September 2013, p. 3, http://www.platts.com/IM.Platts.Content/ProductsServices/ConferenceandEvents/2013/pc378/presentations/6.Tora%20Leifland_TAP.pdf.

[32] David Koranyi, "Southern Gas Corridor: Godot Finally Comes?", in *The Huffington Post*, 6 April 2013, http://huff.to/18QVlGs.

[33] "Azerbaijan planning third stage of Shah Deniz project after 2025", in *Reuters*, 12 March 2014, http://uk.finance.yahoo.com/news/azerbaijan-planning-third-stage-shah-162137745.html.

[34] US Energy Information Administration (EIA), "Turkmenistan", in *EIA Country Analysis Briefs*, 25 January 2012, p. 7, http://www.eia.gov/countries/cab.cfm?fips=TX.

[35] China National Petroleum Corporation (CNPC), *Flow of natural gas from Central Asia*, http://www.cnpc.com.cn/en/press/Features/Flow_of_natural_gas_from_Central_Asia_.shtml; Marat Gurt, "China asserts clout in Central Asia with huge Turkmen gas project", in *Reuters*, 4 September 2013, http://www.reuters.com/article/2013/09/04/us-gas-turkmenistan-galkynysh-idUSBRE9830MN20130904; Michael Lelyveld, "China Pursues New Central Asian Gas Route", in *Radio Free Asia*, 10 February 2014, http://www.rfa.org/english/commentaries/energy_watch/gas-02102014124143.html.

[36] Arthur Max, "Could World's Second-Largest Gas Reserves be Inching Toward Development?",

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is a target of international sanctions, which prevent Tehran from taking advantage of its vast natural gas reserves. Even if the situation around Iran radically improved and sanctions were lifted in the near future, it might take Iran at least a decade to get its gas online, and several decades to achieve its full potential production capacity.

So far, Iran has proven to be an unreliable supplier to Turkey.[37] For instance, in 2006-2008, Iran cut supplies to Turkey in order to compensate for a lack of gas availability domestically. Additionally, sabotage from the Kurdish Workers' Party regularly results in disruptions of supplies and might threaten Iran's exports to Europe. If Iran were to become a source of gas for Europe, similar problems could be expected.

Iraq has proven to be an unreliable supplier to Turkey as well.[38] Although Turkey is eager to buy gas from the Kurdish Northern Iraq, such steps irritate Baghdad, and as a result the gas exports from northern Iraq cannot be regarded as stable, especially because some of the fields are in volatile territories and may be threatened by continuous disruptions.

6. The role of Turkey

Turkey is in an uneasy position when it comes to natural gas, and its domestic gas demand may constitute an obstacle to TANAP's role as a means of diversifying Europe's sources of gas. Despite its aspirations to become a gas re-exporter, it is currently dependent on gas supplies from Russia, as its other suppliers such as Azerbaijan, Iran and Iraq either do not have the capacity to supply Turkey with enough gas to meet its rising demand, as is the case with Azerbaijan, or their supplies are unreliable, as with Iran and Iraq. Russia now serves as Turkey's supplier as a last resort. The main gas pipeline that ensures gas supplies from Russia is the Blue Stream, with a capacity of 42 mcm (1,550 MMcf) per day.[39]

Moreover, Turkey is the fastest-growing market for Russia, as a significant share of its natural gas imports (57%) is used to generate electricity at gas-fired power plants.[40] In 2010, 16.4% of Turkey's overall energy consumption came from gas.[41] Continuing growth of Turkey's industrial sector could further increase its gas

in *Natural Gas Europe*, 28 January 2014, http://www.naturalgaseurope.com/iran-natural-gas-sanctions.

[37] Soner Cagaptay and Tyler Evans, *Turkey's Energy Policy and the Future of Natural Gas*, Paper prepared within the framework of The Geopolitics of Natural Gas project, December 2013, p. 22, http://bakerinstitute.org/research/turkeys-energy-policy-and-future-natural-gas.

[38] Ibid.

[39] US Energy Information Administration (EIA), *Turkey*, February 2013, http://www.eia.gov/countries/cab.cfm?fips=tu.

[40] Ibid.

[41] Soner Cagaptay and Tyler Evans, *Turkey's Energy Policy and the Future of Natural Gas*, cit., p. 7.

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demand. By 2020, Turkey's annual gas consumption is expected to rise to around 70 bcm,[42] compared to 45.3 bcm in 2012.[43]

7. The answer seems to be LNG

Shale gas production in the United States is growing fast, which nurtures hopes among some EU countries, mainly in Central Europe, for eventual US exports of LNG.[44] Total US domestic gas production, which fell to less than 1.5 bcm (52 bcf) per day in 2005, increased to over 1.9 bcm (69 bcf) per day in 2012. This amounts to 693.5 billion cubic meters a year - more than Russia. This growth in production can be almost entirely attributed to unconventional gas. As a result, North American domestic gas prices have dropped as market supply has surged.[45]

While before 2005 the US was a gas importer, the situation changed after getting shale gas online, and since 2005 the export potential of the US has been growing. Canada has seen a similar surge in shale gas production since the middle of the 2000s. According to the EIA, the United States could become a net exporter of LNG by 2016 and an exporter of oil a few years after.[46]

However, it is hard to predict how much LNG the US will ultimately be exporting to Europe. The current gas prices in Asian markets are higher than those in Europe, and due to the continuing economic growth in South and East Asia, the price differential between these gas markets is unlikely to shrink. These higher prices in the gas-hungry Asian markets have been drawing a significant share of LNG exports, which might have otherwise ended up in Europe.[47] Therefore, after North America becomes a net exporter of LNG, it may focus on supplying predominantly the more lucrative Asian market. Exporting LNG to Asia looks more profitable despite higher transportation costs to Asia than to Europe. A paper by the Oxford Institute for Energy Studies estimates that due to an increase in US domestic spot gas prices because of the greater global demand, the price differential between US LNG imports and European spot prices may make European markets less attractive

[42] Ibid.

[43] International Energy Agency (IEA), *Oil and Gas Security Emergency Response of IEA Countries. Turkey 2013*, 2013, http://www.iea.org/publications/freepublications/publication/name,38110,en.html.

[44] Josh Lederman, "4 Nations Urge US Gas Exports Amid Ukraine Crisis", in *AP*, 8 March 2014, http://t.co/AV2AmYptQR.

[45] International Gas Union (IGU), *World LNG Report 2013*, http://www.igu.org/news/igu-world-lng-report-2013.pdf.

[46] US Energy Information Administration (EIA), Natural Gas from Executive Summary of *Annual Energy Outlook 2014*, 15 April 2014, http://www.eia.gov/forecasts/aeo/source_natural_gas_all.cfm.

[47] International Energy Agency (IEA), "Executive Summary", in *Medium-Term Gas Market Report 2013: Market Trends and Projections to 2018*, p. 4, https://www.iea.org/w/bookshop/add.aspx?id=446.

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for LNG exports than Asian markets.[48] Nevertheless, given that today Europe imports LNG from countries like Qatar (despite the fact that European gas prices are substantially lower than those in Asia), it is reasonable to expect that an increased potential supply would also increase the volume of US gas sold in Europe.

The scenarios concerning how much LNG the US will be able to export vary. The ICF International works with a baseline scenario of the US exporting 110 mcm (4 bcf) per day, while a high export volume scenario calls for the US to export 450 mcm (16 bcf) per day by 2035.[49] Both of these amounts are significant enough to contribute to the supply of gas in both Europe and Asia.

However, it is likely that after the US becomes an exporter of LNG, US domestic prices would rise due to an increase in global demand for US gas. Higher US prices would lower the potential profit margin from exporting US LNG to Europe. In case European spot prices keep above approximately $10/MMBtu, LNG imports into Europe from North America are likely to be economically profitable.[50]

In addition to the expected US wave of LNG exports, companies operating in East African countries such as Tanzania and Mozambique are exploring potential LNG exports, which would have a similar influence on the global LNG market as North American exports. For instance, Mozambique is expected to launch its first LNG liquefaction facility in 2018, with the capacity of 69 bcm (2,435 bcf).[51]

Conclusion

The commercial viability of the Southern Corridor will ultimately depend on whether the international community manages to overcome Russian opposition, which is currently preventing Azerbaijan and Turkmenistan from building the Trans Caspian pipeline, and hence the progress of Shah Deniz III. A related question is whether there will be enough progress with Iran's nuclear program, which would allow the lifting of Western sanctions against Tehran. These are the main bottlenecks for the viability of the Corridor.

The Russian South Stream project contributes to Europe's energy insecurity, but if completed it will somewhat lower the potential impact on Europe of a gas dispute between Russia and Ukraine, or Russia and Belarus.

[48] James Henderson, "The Potential Impact of North American LNG Exports", in *Oxford Institute for Energy Studies*, No. NG 68 (October 2012), p. 46-47, http://www.oxfordenergy.org/2012/10/the-potential-impact-of-north-american-lng-exports.

[49] ICF International, *U.S. LNG Exports: Impacts on Energy Markets and the Economy*, Report for the American Petroleum Institute (API), 15 May 2013, p. 16-17, http://www.api.org/policy-and-issues/policy-items/lng-exports/us-lng-exports-impacts-on-energy-markets-and-economy.

[50] James Henderson, "The Potential Impact of North American LNG Exports", cit., p. 46.

[51] John P. Banks, "Could East African Gas Impact U.S. Liquified Natural Gas Exports?", in *Up Front*, 15 February 2013, http://brook.gs/1m9jQmQ.

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In the case of the US expanding its LNG exporting, the answer to long-term European energy security seems to be LNG imports. LNG from the US and East Africa, supplemented by potential pipeline supplies from Azerbaijan, Iran and North Iraq, as well as North Africa, are likely to strip Russia of its gas monopoly in Eastern and Northern Europe. From a foreign policy and security perspective, Russia is better off being one of several regular suppliers that competes with others by offering better service, better financial conditions, and a more attractive price.

The security of Europe's gas supplies lies not just in price, but also in availability, reliability, and separation from geopolitical agendas. While the future LNG imports seem to be of sufficient quantities to considerably improve Europe's energy security, gas from the Southern Corridor is still preferable due to its potentially lower price and lesser political risk once the pipelines are constructed. The prices of future LNG imports to Europe are likely to be influenced by high Asian gas prices. The piped gas from the Southern Corridor would thus be not only a stable energy supply, but also a cheaper source than LNG, as Europe would not be competing with other more lucrative markets for the gas from the Southern Corridor. Thus, the prospects for medium and long-term European gas supply security with the construction of TANAP and TAP look promising.

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