[CASE] Routes to Energy Security: The Geopolitics of Gas Pipelines between the EU and its Southeastern Neighbors

Angel Saz-Carranza, Marie Vandendriessche, Alison Courtney (2013)

Introduction

In the realm of geopolitics, resource fluctuations bring about power changes. The European Union, whose very origins lie in the quest for energy supply and security, finds itself among those scrambling to respond to the new energy outlook, while simultaneously confronting classical geopolitical issues with Russia, its giant energy-producing neighbor to the east.

While the US is experiencing an energy revolution, the EU has not experienced such abrupt changes in its indigenous production: its overall trends—declining domestic production, strong and growing import dependence (in the case of petroleum and other liquid fuels, but spectacularly so for natural gas), and overall, an increasing reliance on natural gas in the energy mix—remain steady. Its interdependent hydrocarbon relation with gas giant Russia, which has grown ever tenser since the mid-2000s, remains on the foreground in almost all of the EU's foreign policy dealings with Moscow.

The EU's chosen route to external energy security – which can be translated to security of supply – is mainly through source diversification for natural gas and careful choice of transit routes. A chief component of the EU's strategy in supply diversification is the gas pipelines making up the so-called Southern Corridor.

Geopolitics, geo-economics, and commercial interests intersect in the decisions on the various pipeline proposals, including Nabucco, Trans Anatolian Pipeline (TANAP), Nabucco West, Trans Adriatic Pipeline (TAP), and Russia's South Stream.

Energy in the EU

The EU's energy situation is one of import reliance: lacking the indigenous energy endowments required for self-sufficiency, the EU depends on its energy-rich neighbors to the North, the South, and the East in order to ensure its supply. In 2011, the then-27 member states imported over half of their energy (54%), with Russia and Norway as their main petroleum and gas suppliers. Moreover, this dependence continues to rise steadily, especially for natural gas, where imports stand at 154% in comparison with 1995 levels.

As the EU currently relies on imports for 54% of its energy needs (Eurostat, 2011), securing supply is of vital interest. The Commission proposes three main policy tracks to improve its security of supply. Firstly, continue exploiting and increasing indigenous energy sources such as

renewable energy sources, domestic reserves of conventional and unconventional fossil fuels and nuclear energy. Secondly, diversify supply countries and routes for imported fossil fuels. Thirdly, improve the energy efficiency, including deploying smart grids and having all member states meet the previously-agreed objective of ensuring electricity interconnections equivalent to 10% of their installed production capacity.

This case focuses primarily on the second policy, the diversification of sources and supply routes, namely through the establishment of a fourth external source of gas—through a network of pipelines called the South Corridor.

Energy Mix

According to Eurostat, the EU27's energy mix in 2011 was split as follows: petroleum and products and natural gas made up over half of the whole (providing 35% and 24% of needs, respectively), with solid fuels (17%), nuclear heat (14%) and renewables (10%) delivering the rest[1]. This mix is forecast to shift gradually, with natural gas increasing its share of the pie. For more information, see Appendix 1.

Natural Gas in Europe

In the EU, natural gas currently makes up 24% of the energy mix and 22.2% of electricity provision. These proportions are similar to global trends, where the respective figures stand at 21.3% and 21.9%. The world's reserves of natural gas are ample, and increasing: it is estimated that they have grown by 39% over the past twenty years[2]. Nearly three-quarters of the world's proven reserves lie in the Middle East and Eurasia; Russia, Iran, and Qatar are the top three producers - accounting for about 55% collectively[3].

Together, Europe and Eurasia produce 30.7% of the world's natural gas[4]. However, the EU countries' share in that percentage is low and decreasing. The Netherlands and the United Kingdom are the EU's main indigenous producers; however the UK in particular has seen its production drop over the last decade – from 103.6 bcm (billion cubic meters) in 2002 to 41 bcm in 2012, while Dutch production is essentially flat. Gas therefore flows into the Union from abroad, mainly from Norway and Russia: Norway, a member of the European Economic Area and (EEA) and the European Free Trade Area (EFTA), continues to increase its production (by over 12% in 2012, according to BP data[5]), flirting with Russia for the top spot in EU imports. Meanwhile, the EU's import dependency is expected to increase, from 67% in 2011 to 80% or more in 2030.

[1] Eurostat data for 2011, published in April 2013.
[2] s.n. (2012) Worldwide look at reserves and production. *Oil & Gas Journal*, *110(12),* 28-31.
[3] U.S. Energy Information Administration (EIA). (2013). *International Energy Outlook 2013.* (DOE/EIA-0484(2013)). Washington D.C.
[4] 2012 data. BP. (2013). *BP Statistical Review of World Energy June 2013*. London.
[5] idem

Key Gas Infrastructure

Given this equation of supply and demand, natural gas trade in the region is very intense. In 2011, Europe and Eurasia accounted for the trade of 469.7 bcm of the total 694.6 bcm of international pipeline-supplied natural gas. The infrastructure matches the trend: two-thirds of the world's international natural gas pipelines operate in Europe. The EU already holds some €500 billion of sunk costs in natural gas infrastructure; the Commission estimates some €70 billion more will be necessary in the period up to 2020[6].

With regard to this critical infrastructure, the Commission at the end of 2013 published its strategy for long-term energy infrastructure in Europe[7], defining the following priorities for gas: firstly, diversify the gas infrastructure; secondly, expand the Southern Gas Corridor in order to import about 10% of European demand from the Caspian region and the Middle-East; thirdly, increase flexibility by developing more LNG terminals and storages; finally, increase indigenous production from the Eastern Mediterranean, from biogas or unconventional sources. Among other key gas infrastructures the strategy identifies is the Southern Gas Corridor (SGC): infrastructure for the transmission of gas from the Caspian Basin, Central Asia, the Middle East, and the Eastern Mediterranean Basin to the Union to enhance diversification of gas supply. See Appendix 2 for other key gas infrastructures.

Relations with Russia

One third of the Union's natural gas needs are met by one single supplier: Russia. This tight relation is precarious, especially for EU members such as Lithuania, Bulgaria, and Estonia, which depend on the Russian giant for almost 100% of their gas needs. Recent power struggles over the nations sandwiched between East and West, reminiscent of Cold War protection of the areas of influence, have not eased the minds of policy-makers and citizens in Europe's energy-dependent nations.

The long-standing EU-Russian gas relation is symbiotic and delicate: the EU relies on Russian gas to keep its households warm, yet Russia's Gazprom too is dependent on the EU, as the market for over half of its exports. Throughout the 1960s to 1990s, these relations, rooted in standard long-term contracts, were relatively stable, but the new millennium brought a number of severe supply shocks. The Ukraine gas cut-offs in 2006 and 2009, culminations of Ukraine-Russia (Gazprom) disputes on issues such as payments and pricing, as well as the supply glitches during the 2012 cold snap, heightened the unease about Russia's energy policy.

---

[6] European Commission. (2011). *Proposal for a Regulation of the European Parliament and of the Council on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/EC.* (COM(2011) 658)

[7] European Commission. (2013) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Long term infrastructure vision for Europe and beyond* (COM/2013/0711). Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52013DC0711&from=EN.

Many have argued, through a Realpolitik lens, that Russia wields its energy policy as a foreign policy stick. After the end of the Cold War, the dissolution of the Soviet Union and subsequent events such as Russia's economic crisis and the series of NATO enlargements (with the 2004 enlargement absorbing even the three ex-Soviet Baltic states), Russia's material power was reduced to its energy. Moreover, energy and the Russian state are tightly interwoven: Gazprom is state-controlled, and Moscow depends on energy revenue for half or more of its budget. For Gazprom, in turn, maintaining exports is vital, especially given the low prices it can fetch for its gas domestically due to government price regulation. For more information, see Appendix 3.

Southern Gas Corridor

The EU's quest for energy security and for a union-wide energy policy has been lengthy. Supply diversification and secure transit routes are key ingredients to this pursuit. In particular, adding a fourth external supplier to the three established sources – the North Sea, Algeria, and Russia – is a key priority. In the case of diversifying away from Russia's supply and from transport through unstable transit countries such as Ukraine, the EU's main approach has been the construction of a fourth energy corridor, the Southern Gas Corridor, in order to better access supplies from Southeastern Europe and the Caspian.

This 'corridor', a network of gas pipelines reaching from the gaslands of the Southeast (the Caspian, Central-Asia and even potentially the Middle-East) to the EU's power plants and homes, has no pre-established route. Instead, over the course of the past dozen years, a number of competing and interconnecting pipelines have been proposed, including Nabucco, Nabucco West, the Trans Adriatic Pipeline (TAP), the Trans Anatolian Pipeline (TANAP), as well as Russia's South Stream. In the following sections, we will dissect the geopolitics, geo-economics and commercial interests which converge in the decisions on these pipelines. Each represents a crossroads where States, the EU, and firms meet, each defending their interests, whether from the perspective of suppliers, transit countries, or consumers.

Nabucco vs. TANAP

Nabucco

Nabucco, named after Verdi's famed opera, which the five pipeline partners attended before signing a protocol of intention in 2002 to construct the pipeline, was one of the first projects to be proposed in the Southern Corridor project. Austria's OMV[8] and Turkey's BOTAS[9] initially discussed the project in early 2002, with RWE[10] (Germany), MOL[11] (Hungary), Bulgargaz (Bulgaria), and Transgaz (Romania) signing on later[12]. Each partner held one sixth of the venture.

[8] Österreichischen Mineralölverwaltung Aktiengesellschaft

[9] BOTAŞ Petroleum Pipeline Corporation

[10] (until 1990) Rheinisch-Westfälisches Elektrizitätswerk AG

[11] Magyar Olaj- és Gázipari Nyilvánosan működő Részvénytársaság, or Hungarian Oil and Gas Public Limited Company

[12] In early 2013, RWE sold its shares (16.67%) to OMV, who in May 2013 sold a 9% of the shares to GdF Suez.

The European Commission threw its weight behind the project, financing feasibility studies for Nabucco (along with ITGI (the Interconnector Turkey – Greece – Italy) and White Stream[13]) through the European Energy Program for Recovery (EEPR). The project was likewise backed by the US. In 2009, for instance, Special Envoy Richard Morningstar represented the United States at the signature of the intergovernmental agreement between the five states along Nabucco's route: Turkey, Romania, Bulgaria, Hungary, and Austria.

Nabucco

The project envisioned for Nabucco was grand: a 3300-3900km pipeline, running from Erzurum in Eastern Turkey to the Central European gas hub in Austria's Baumgarten an der March. The sheer length of the pipeline would allow some of the EU states most dependent on Russian gas to be hooked up directly to sources from the Caspian and beyond: in Erzurum, Nabucco planned to connect to the South Caucasus Pipeline[14]. Nabucco's initial capacity was estimated at some 13 bcm, with predictions for an increase to approximately 31 bcm in later years.

Ambitious plans for Nabucco envisioned its eastern starting point as an access point not only for Caspian gas, but also for resources from the Middle East and possibly even North Africa (Egypt, in particular). However, from the very beginning, obtaining firm commitments from suppliers in order to ensure diversified sourcing (one of the main goals of the project) was problematic. The Middle East proved unworkable as a source for gas to run through Nabucco; northern Iraq's attractive gas fields were not yet ripe for picking, due to the uncertainty regarding their governance. Infrastructure was a further inhibitor: accessing Iraq's gas would require

[13] White Stream was proposed to start off from Georgia, cross the Black Sea, and land on either Romania or the Crimean Peninsula.

[14] This pipeline runs 692 km from Baku (Azerbaijan) to Erzurum (Turkey) through Georgia, along the same corridor as the Baku–Tbilisi–Ceyhan (BTC) crude oil pipeline.

construction of an extra connector to hook up to existing pipelines heading toward Europe. And Iran, bordering the Caspian, still had its resources locked away because of sanctions related to its nuclear program.

With Turkmenistan's supplies unattainable and Kazakhstan still more concentrated on oil than gas production, the Nabucco partners turned to Azerbaijan, whose giant offshore Shah Deniz gas field lies just 70 km from the capital Baku on the South Caspian Sea. More important, however, Shah Deniz gas could easily be transported directly to Europe (via Turkey) without having to traverse countries such as Russia or Iran. Both the European Commission and the United States, therefore, pushed hard to secure Azeri gas supplies for the EU and Nabucco—all of this while Russia's Gazprom eyed the same final markets.

TANAP

The Trans Anatolian Pipeline (TANAP) runs across Turkey, spanning 2000km from Georgia to Greece, and will initially carry 16 bcm/year upon initial operation in 2018. It may be expanded to 23 bcm/year. The expected cost is €7 billion. Founded and owned originally by SOCAR (80%, Azerbaijan), BOTAŞ (15%, Turkey), and TPAO (5%, Turkey), TANAP is expecting to have BP join in the ownership soon.

Trans Anatolian Pipeline (TANAP)

From its starting point on the Turkish-Georgian border, connections to the Eastern Mediterranean, Iran and Iraq are possible, and planned. However so far, TANAP is only fed by Shah Deniz, through the South Caucasus Pipeline.

Shah Deniz Consortium (SDC): The Source and Judge

Azerbaijan's Shah Deniz field is estimated to hold reserves of up to 1200 bcm of gas and 3000 million barrels of oil. The field was discovered in 1999 and started operating in 2006. It currently produces 9 bcm/year, but is expected to reach 16 bcm/year by 2018 as part of its stage two development.

The field is operated by BP, who owns 25.5% of the Shah Deniz Consortium (SDC), which is furthermore composed of Statoil (25.5%, Norway), SOCAR[15] (10%, Azerbaijan), Total S.A. (10%), LUKoil (10%, Russia), NIOC[16] (10%, Iran), and TPAO[17] (9%, Turkey). See Appendix 4 for more information.

South Stream

South Stream is the grandest pipeline presently proposed in the Southern Corridor, stretching for 2380km. Announced in 2007 and currently under construction, Russian officials have estimated South Stream will be operational by 2015. It will transport 16bcm/year initially, though it is planned to be enlarged fourfold to 63bcm/year by 2018. Costs have been estimated to stand at €16 billion.

South Stream

Shareholders of South Stream's offshore component are Gazprom (50%, Russia), Eni (20%, Italy), EdF[18] and Wintershall (France and Germany, 15% each). The offshore tract will connect

[15] State Oil Company of Azerbaijan Republic
[16] National Iranian Oil Company
[17] Türkiye Petrolleri Anonim Ortaklığı, Turkey's national oil and gas company
[18] Électricité de France S.A.

Russia with Bulgaria. From there, the pipeline will travel over land to Serbia, Hungary and Slovenia, finally connecting with North Eastern Italy.

Impressively, during 2008-2010, Russia signed agreements with all European transit countries committing them to South Stream, and even signed MOUs with Greece and Austria, through which South Stream is not expected to transit, along its current proposed route.

Ultimate Decision

The fate of the pipelines was decided by the Turkish and Azeri governments when SOCAR (Azerbaijan's state oil company), BOTAS, and TPAO (Turkey) committed their support to TANAP. The Turkish and Azeri governments effectively killed Nabucco; TANAP stole away the first two-thirds of Nabucco's planned route, as well as its direct feed-in from Azeri Shah Deniz field. The Trans Anatolian Pipeline (TANAP), announced in 2011, will start construction in 2014 and cost €7 billion.

Why was the TANAP proposal successful while the Nabucco proposal was not?

APPENDICES

Part 1

Appendix 1: Energy in the EU

Whereas the US has in recent years experienced a resurgence of energy production through its so-called shale revolution, the EU is unlikely to stumble upon such riches in the immediate future. Significant obstacles stand in the way of a European non-conventional hydrocarbon production boom: on the one hand, Europe's geology and geography are less forgiving than the US' easy-access shales; on the other, social and institutional factors such as population density, citizen concerns, and property rights complicate the prospects for such techniques as hydraulic fracking. Exploration projects are underway in some Eastern EU member states; however in any event, the Commission itself in 2012 recognized that shale gas production would not make Europe self-sufficient in natural gas: in the best case, it would simply replace conventional production, keeping import dependence around 60%[20].

In 1998, a European directive was approved with the aim to liberalize the gas market and promote integration of a European energy market. In order to liberalize the market, the directive aimed at vertically separating (unbundling) gas and electricity providers from the transport and supply organizations (TSOs). Unbundling initiatives first focused on legal and functional aspects, with ownership unbundling added later, in the EU's Third Energy Package, adopted in 2009.

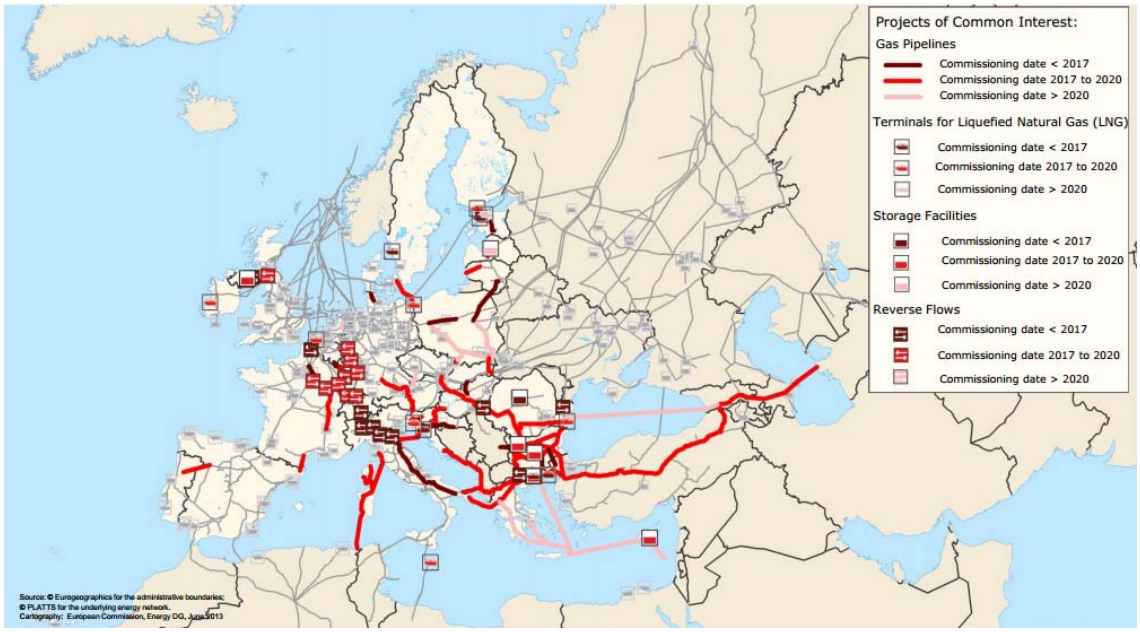
[20] European Commission Joint Research Centre. (2012) *Unconventional Gas: Potential Energy Market Impacts in the European Union.* (JRC 70481). Luxembourg: Publications Office of the European Union. Available at: http://ec.europa.eu/dgs/jrc/downloads/jrc_report_2012_09_unconventional_gas.pdf

Appendix 2: Key Gas Infrastructures

The strategy for long-term energy infrastructure in Europe identifies as key the following gas infrastructures:

- North-South gas interconnections in Western Europe ('NSI West Gas'): gas infrastructure for North-South gas flows in Western Europe to further diversify routes of supply and for increasing short-term gas deliverability.
- North-South gas interconnections in Central Eastern and South Eastern Europe ('NSI East Gas'): gas infrastructure for regional connections between and in the Baltic Sea region, the Adriatic and Aegean Seas, the Eastern Mediterranean Sea and the Black Sea.
- Southern Gas Corridor ('SGC'): infrastructure for the transmission of gas from the Caspian Basin, Central Asia, the Middle East and the Eastern Mediterranean Basin to the Union to enhance diversification of gas supply.
- Baltic Energy Market Interconnection Plan in gas ('BEMIP Gas'): gas infrastructure to end the isolation of the three Baltic States and Finland and their dependency on a single supplier.

Energy Infrastructure - Natural Gas



Source: European Commission

Appendix 3: Relations with Russia

Recent global gas developments may threaten Russia's power source. The shale revolution in the US has upped the ante. Especially if the US approves natural gas exports, Russia will start to face new competition from LNG trade and may see its power to set the conditions for gas export fall. In any event, the development of its indigenous unconventional resources is still a distant prospect in Russia; moreover, this evolution may offer some glimpses of technological backwardness. All in all, the global gas revolution can only add to Russia's fears of loss of leverage over the EU.

The two parties are very conscious of their natural gas symbiosis. Institutionally, at least, this interdependence was formally recognized in 2013 with the signature of the *Roadmap for Energy Cooperation to 2050*[21] by EU Energy Commissioner Oettinger and Russian Energy Minister Novak. However, the EU and Russia uphold very different paradigms in their energy policy. EU policy is mainly focused on market liberalization and its campaign of vertical unbundling. In Russia, on the other hand, Gazprom still serves very much as a state instrument – this despite stipulations in the aforementioned Roadmap to 2050 on Russian gas market liberalization.

[21] EU-Russia Energy Dialogue. (2013). *Roadmap EU-Russia Energy Cooperation until 2050.* Available at: http://ec.europa.eu/energy/international/russia/doc/2013_03_eu_russia_roadmap_2050_signed.pdf

Appendix 4: Shah Deniz Consortium (SDC): The Source and Judge

The SDC connects into the South Caucasus Pipeline (SCP)[22], which is operated by BP and carries 7 bcm/year from Baku (Azerbaijan) to Erzurum (Turkey) through Georgia. It is 692 km long and has been in operation since 2006, running along the same corridor as the much smaller Baku–Tbilisi–Ceyhan (BTC) crude oil pipeline. The SCP is currently under expansion, as part of the stage two development of the Shah Deniz Consortium, and will triplicate its capacity once enlarged.

[22] Also known as Baku–Tbilisi–Erzurum (BTE) Pipeline or Shah Deniz Pipeline