

## Analysis

# The Southern Gas Corridor and Europe's Gas Supply

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## Abstract

The southern gas corridor, as embodied by the European-supported Nabucco pipeline, is designed to secure access to new suppliers of gas outside of Russia for the European market and open a route for gas deliveries that does not traverse Russian territory. While there are a number of Central Asian and Middle Eastern countries that could supply Nabucco with gas in the longer term, only Azerbaijan can be counted on as a secure source of regular deliveries in the foreseeable future. A comprehensive assessment of Nabucco must take into account alternative future pipeline routes that will also lead westwards from the Black Sea region, namely the Russian-supported South Stream underwater pipeline from the Black Sea to Bulgaria, with an extension towards the Balkans, and designs for a White Stream underwater pipeline from Georgia to Ukraine. Among Nabucco's competitors, the South Stream has the best prospects of being realized, but it would neither prevent nor replace Nabucco. The security of Europe's supply will not be substantially increased by Nabucco, because this channel will deliver only a small fraction of the continent's gas imports. On the other hand, Europe has many other potential delivery channels, instruments, and measures for enhancing the security of natural gas supplies at its disposal besides the southern gas transit corridor.

## Nabucco: The project

In the interests of improving gas supplies, a number of actors, including the EU Commission, have demanded that Europe diversify its gas imports by constructing additional pipelines and liquefied natural gas (LNG) terminals. Specifically, in the aftermath of the Russia-Ukrainian gas crisis of January 2009, many in Europe called for speedy construction of the Nabucco pipeline, which would serve to deliver natural gas from the Caspian region and the Middle East to the European market as the backbone of a "southern gas corridor". The project would be financed by loans from the European Investment Bank in Budapest, subsidized by €250 million in funding from the EU budget.

The OMV and Botas energy corporations conceived the Nabucco pipeline project in 2002 and named it after the opera of Giuseppe Verdi. The plans call for the pipeline to carry gas to Europe from Azerbaijan, Kazakhstan, Uzbekistan, and Turkmenistan as well as from Iran and Iraq and even North Africa on a route running from Turkey, across Bulgaria, Romania, and Hungary to Austria. A consortium consisting of the mainly state-owned gas companies Botas (Turkey), Bulgargaz (Bulgaria), Transgaz (Romania), Mol (Hungary), and OMV (Austria), as well as the private German RWE company hope to finance, construct, and operate it. The planned capacity is 31 billion m<sup>3</sup>, with up-front investments of around €8 billion for the construction of the 3,300-km long pipeline.

## Azerbaijan as a Gas Provider

Azerbaijan has supplied Turkey via the Baku-Erzurum pipeline, also known as the South Caucasus Pipeline (SCP), since 2007. From there, the Turkey-Greece-Interconnector (TGI) and Interconnector-Greece-Italy (IGI) offshore pipelines transport the gas further to Greece and Italy. The SCP could also carry gas supplies from Turkmenistan or Kazakhstan to Turkey, provided that the transport facilities across the Caspian Sea are available.

Exploration of the major offshore Shah Deniz gas field in the Caspian Sea will increase the importance of Azerbaijan as a gas-exporting country oriented towards the Turkish and West European markets. In addition to covering domestic requirements, in the long run the country will be able to export up to 30 billion m<sup>3</sup> of gas to Turkey and Europe.

## Central Asian Gas Providers

Kazakhstan, Uzbekistan, and Turkmenistan have a combined long-term potential (i.e., from approximately 2020 onwards) for gas exports of around 150 to 200 billion m<sup>3</sup>, which is equivalent to about two-thirds of Russia's longer-term export potential. However, the gas produced by the Central Asian CIS states will go mainly to Russia and Ukraine as well as to China, as there is already a Soviet-era pipeline system ("Central Asia-Center") in place that can deliver supplies at high capacity to Russia and that is currently being overhauled and expanded; furthermore, China is forging ahead with

construction of an eastbound pipeline system that feeds into the Chinese “West-East” gas pipeline. Since Russia’s Gazprom intends to pay European rates (minus transport fees) for Central Asian gas imports from 2009 onwards, exports to Russia have become a lot more lucrative for the states of Central Asia than was previously the case. China will also offer favorable rates to ensure that Central Asian suppliers will meet its gas requirements.

Alternative routes for delivering Central Asian gas to the West while avoiding Russian territory include pipelines traversing the Caspian Sea to Azerbaijan (Trans-Caspian Pipeline), transporting LNG or compressed gas via the Caspian Sea to Azeri ports, and overland deliveries along the southern coast of the Caspian Sea via Iranian territory to Turkey. As of 2009, the Trans-Caspian Pipeline, which has been under discussion since the 1990s, still has not been constructed. The delay stems from the unresolved disputes among the Caspian littoral states over the exploitation of oil and gas resources situated in the middle of the Caspian Sea (such as the Kyapaz/Serdar deposit, which Azerbaijan and Turkmenistan both claim). It is also questionable, however, whether Azerbaijan and Iran are prepared to allow large quantities of gas to be piped through their territories, since both countries regard themselves as supplier states, not transit states. On the other hand, since Turkmenistan’s presidency passed from Saparmurat Niyazov (Turkmenbashi) to Gurbanguly Berdimukhammedov in 2006, there have been signs of rapprochement between Azerbaijan and Turkmenistan that might have a positive effect on cooperation in the energy sector. In a first step, for example, Azerbaijan and Turkmenistan could link their offshore extraction platforms in the Caspian through an underwater pipeline, allowing quantities of gas extracted from Turkmen fields to be routed towards Azerbaijan.

### **Iran and Iraq as Gas Providers, the Role of North Africa**

Both Iran and Iraq have considerable potential export volumes. However, it is impossible to predict when the two countries will be able to increase their production and what the extent of their domestic consumption will be, so there are no reliable export forecasts. Despite Iran’s huge reserves and resources, which make the country the most gas-rich in Eurasia after Russia, it only acted as a net exporter of gas between 1970 and 1980, when it supplied gas to the Soviet Union. Since then, apart from small volumes exported to Turkey, which are offset by equivalent imports from Turkmenistan, its entire pro-

duction has been consumed domestically. One-third of the Iranian gas is used for downhole pumping in oilfields in order to increase extraction; another third is used for electricity generation; the remainder is used in the petrochemical industry and in private households. As with petroleum, Iran subsidizes the domestic consumption of gas through low prices making gas use very high relative to population size and economic output.

Since December 2001, a pipeline connects Tabriz in Iran to Erzurum in Turkey with a nominal capacity of 20 billion m<sup>3</sup>; however, only a few billion m<sup>3</sup> of that capacity are actually in use, and the pipeline is closed down altogether whenever there is a gas shortage in northern Iran. Furthermore, a gas pipeline runs from southern Turkmenistan through Iran to Turkey (Korpezhe – Kurt Kui). It has a capacity of 13 billion m<sup>3</sup> and operates at about half of that potential. The development of major Iranian gas resources in the Persian Gulf (South Pars) is sluggish and constrained by US sanction policies. For all of the above reasons, no one knows when Iran will be willing and able to pipe gas northwards in quantities that are relevant to Europe and feed it into the Turkish gas network. One estimate (Hafner 2008) predicts that Iranian exports towards Turkey and Europe will reach a volume of 35 billion m<sup>3</sup> by 2020. Competing projects include pipelines running to Pakistan, India and China, as well as LNG exports to the world market, which would also be in the interests of China, Pakistan, India, and other countries. However, the future of Iranian exports to Europe will depend not only on economic factors, but to a large extent also on political developments in the Middle East, the country’s domestic situation, and the future stance of the US towards Tehran.

Iraq’s potential for gas exports is significantly smaller than that of Iran. Provided that the country’s domestic and foreign affairs can be stabilized, exports could reach a total of 12 billion m<sup>3</sup> by 2020, 5 billion of which would go to Turkey (Hafner 2008).

Next to Middle Eastern countries, Egypt would also be able to feed natural gas into the southern gas corridor through the existing gas pipeline from Egypt via Jordan to Syria if this pipeline were extended to Turkey. The pipeline could also be used to deliver gas from northern Saudi Arabia.

### **South Stream – A Competitor for Nabucco?**

The South Stream gas pipeline, a project undertaken in June 2007 in collaboration between Gazprom and Italy’s ENI, is to pass along the seabed of the Black Sea from southern Russia to Bulgaria, where it will branch off

southwards towards Greece and Italy and northwards from the Balkans to Hungary. Taking into account the technological challenge of pipeline construction at the bottom of the Black Sea with a depth of up to 2km, it can hardly be expected to start operating by 2013, as planned, but will more likely be brought into service in 2015 or later with a capacity of up to 47 billion m<sup>3</sup>.

South Stream will be able to deliver Russian gas, as well as gas imported from Central Asia, to the Balkan countries and to southeastern Europe without transit through Ukraine. Like the Nord Stream Pipeline though the Baltic Sea, this project strengthens Gazprom's negotiating position vis-à-vis Ukraine. The Blue Stream II scheme, which aimed to add a second leg to the Blue Stream pipeline running from southern Russia to the Black Sea to the Turkish coast and extend it into western Turkey, would have served a similar purpose. It has been cancelled in favor of South Stream, however, probably because Gazprom was concerned that Turkey's negotiating position as a transit country might become too strong, as was already seen in the low price for Russian gas from Blue Stream, which was a longstanding source of disappointment for Gazprom.

Since South Stream is to run largely parallel to the Nabucco pipeline from Bulgaria onwards, many observers regard South Stream and Nabucco primarily as competing projects. This is not necessarily the case, however: Should Europe's need for gas imports increase as predicted by standard scenarios, both pipelines will be required. On the other hand, if demand in Europe should stagnate or diminish, the question of capability utilization would affect all pipelines coming from the East. Probably, transit through Ukraine would be the first to be cut back, since the Ukrainian pipeline network is the oldest one and requires considerable investment for maintenance and technical improvements (modernization of compressor stations). On the other hand, the most recently constructed, most modern, and most efficient pipelines, namely Nord Stream, South Stream, and Nabucco, will most likely remain operational under any scenario.

### **White Stream – A Substitute for Nabucco?**

One project that is still in a very early stage of discussions is the idea of an underwater pipeline from the Georgian Black Sea coast to Crimea, continuing to Ukraine with the possibility of extension to Poland (White Stream or Georgia-Ukraine-EU (GUEU) pipeline). Another variant being considered under this moniker is that of an underwater pipeline through the Black Sea from Georgia to Romania. White Stream has been eclipsed by

the intensifying discussion over Nabucco. This project could be revived, however, if Turkey as a participant in the Nabucco project should make excessive demands (EU membership or a role as an autonomous gas distribution center).

### **Europe's Energy Security and the Southern Gas Transport Corridor**

While it may at first glance appear that the southern gas transport corridor, with the Nabucco pipeline as its main component, not only promises a significant enhancement of Europe's gas supply, but also a major reduction of European dependency on Russian gas imports and a lowering of Russian economic and political dominance in Central Asia, a more differentiated picture emerges upon closer inspection. For the foreseeable future, Turkmenistan, Iran, and other Middle Eastern states cannot be counted on to supply major quantities of gas. Nor should the willingness of Azerbaijan and Iran to serve as transit countries for Central Asian gas be taken for granted. The future role of Turkey also remains unclear. While Ankara is open to the idea of the southern gas corridor, it is not satisfied to function exclusively as a transit country, but wants to acquire a role as an independent gas hub. There are also some indications that Turkey's support for the Nabucco project is contingent on progress in its accession negotiations with the EU.

The only element that appears to be relatively certain is Azerbaijan's ability and willingness to supply Nabucco with 10 to 20 billion m<sup>3</sup> of its own gas. Further smaller quantities of gas for Nabucco of around 5 billion m<sup>3</sup> each will likely be supplied via the existing pipelines from Iran to Turkey and from Turkmenistan via Iran to Turkey.

It is thus likely that European countries will begin importing gas through the southern corridor over the coming decade; however, even after the pipeline begins operating at its full capacity of 31 billion m<sup>3</sup> around 2020, these imports will only account for 6 per cent of expected import requirements of about 500 billion m<sup>3</sup>, thus only marginally raising the volume of European supplies. It is also unlikely that prices will go down as a result: Gas from costly offshore fields in Azerbaijan, Turkmenistan, and Iran that must be transported via yet-to-be constructed pipelines will not be cheaper than Siberian gas supplied through the existing Soviet-era network. Furthermore, under the prevailing conditions of price formation in the European market, the price of gas from the southern corridor will, as with Russian gas, be linked to the price of oil.

Even after the completion of Nabucco, the Central Asian states would remain under Russian sway in multiple ways, including through close energy relations, as their economies and energy sectors would still be closely linked to the Russian national economy. With or without the Nabucco pipeline, Russia will remain the dominant supplier of gas to the countries of Eastern and Central Europe. Nevertheless excessive “dependence” on Russia is not to be expected, as both sides remain highly interdependent.

In order to improve Europe’s mid-term gas supply from the East and its ability to deal with potential disruptions of gas deliveries by transit states such as Ukraine and Belarus, the EU and some of its member states have already begun to aim for certain measures such as constructing and enlarging gas tanks, building interconnector pipelines, further liberalizing the

EU gas market, and enhancing the legal framework for gas imports from non-EU countries by way of partnership agreements.

It should not be forgotten that in addition to the southern corridor, further gas pipelines from Africa through the Mediterranean to Southern Europe are being constructed and that the construction of LNG terminals can increasingly serve to enhance global diversification of Europe’s gas imports. However, in view of the problem of climate change, which is far from being resolved, the main goal of European energy policy is not increasing consumption and imports of fossil fuels, but energy conservation and increasing energy efficiency. In this field, the European countries as well as the countries of the East have their work cut out for them.

*Translated from the German by Christopher Findlay*

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