

TURKEY AS A REGIONAL NATURAL GAS HUB: MYTH OR REALITY?

This article aims to explore the real potential of Turkey to become a regional natural gas hub by focusing on the current situation of gas producing countries around Turkey, and then moving to the future prospects of gas cooperation in the region. To this end, the article provides an assessment of both the current situation and future outlook of gas markets in Azerbaijan, Turkmenistan, Iraq, Iran, Israel, and Cyprus, subsequently providing a discussion of the future prospects of the Southern Gas Corridor and the potential Eastern Mediterranean Gas Corridor. This analysis demonstrates that Turkey will difficulty become a regional gas hub in the medium term (up to 2020-25), while it could have the potential to play an important role in the regional gas markets in the longer term (after 2025-30). This longer term potential can be realized if a number of infrastructural, commercial, and political barriers are overcome and if the EU gas demand recovers.

Simone Tagliapietra*



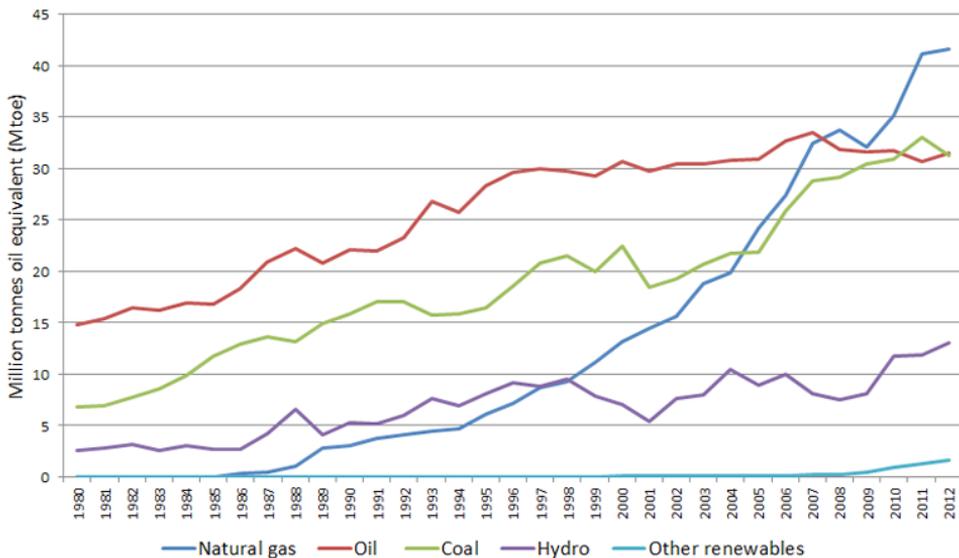
* Simone Tagliapietra is a researcher at *Fondazione Eni Enrico Mattei* and a visiting researcher at Istanbul Policy Center in Turkey.

Over the last years Turkey has been increasingly associated in international political and economic debates with concepts such as “energy corridor” and “energy hub”. This characterization of Turkey is mainly due to its unique geographical position at the crossroads of the Caucasus, Central Asia, the Middle East, and Europe. Furthermore, international discussion of Turkey’s future role in terms of energy transit over the last decade has particularly focused on natural gas, making Turkey a hot topic in debates relating to natural gas markets. This latest trend has been mainly led by two key drivers: one of them is internal, concerning Turkey’s expanding natural gas market, while the other is external, concerning the European Union’s (EU) quest to diversify its natural gas supplies away from Russia.

The Internal Driver: Turkey’s Expanding Natural Gas Market

Turkey has always been the major economy of the Southern and Eastern Mediterranean region, and during the 2000s it further strengthened its regional economic preeminence. According to the International Monetary Fund (IMF), the gross domestic product (GDP) of Turkey has increased from 266 billion dollars in 2000 to 794 billion dollars in 2012. This strong economic growth has dramatically boosted the primary energy consumption of the country from 73 million tons of oil equivalent (Mtoe) in 2000 to 119 Mtoe in 2012. In order to satisfy this rapidly increasing energy need, over the last decade Turkey has focused on natural gas.

Figure-1: Turkey’s primary energy consumption by fuel (1980-2012)



Source: Author’s elaboration on the BP Statistical Review of World Energy, June 2013.

Turkey's natural gas consumption has grown dramatically over the last decade –from 15 billion cubic meters (bcm) in 2000 to 46 bcm in 2012– making it the most dynamic natural gas market in the OECD region.

“Turkey’s natural gas consumption has grown dramatically over the last decade –from 15 billion cubic meters (bcm) in 2000 to 46 bcm in 2012– making it the most dynamic natural gas market in the OECD region.”

Considering that Turkey does not possess significant natural gas reserves, this increase in consumption has had to be fulfilled by imported natural gas. Thus, the already high level of Turkey's energy dependency on external suppliers has further deepened, leading the government to designate the security of natural gas supplies as one of its main policy objectives. A key element of this policy is the diversification of natural gas supplies, a feature that led Turkey to establish solid relationships with all natural gas producing countries in the region: Russia, Iran, Azerbaijan, and Iraq – notably with the country's autonomous Kurdistan Regional Government (KRG).

The External Driver: the European Quest for a New “Silk Road”

In addition to its rapidly expanding domestic market, Turkey has become a hot topic of world –and notably European– natural gas markets for another reason: the European quest for a new “Silk Road” aimed at diversifying natural gas imports in order to break out of Russian domination.

In January 2006, after a long-lasting disagreement over natural gas prices, Russia cut off supplies to Ukraine for three days, and Ukraine halted volumes destined for Europe, leaving some Central European countries with gas shortages. After these events, in order to enhance the EU's security in the natural gas supply architecture, the European Commission (EC) adopted a double strategy. In response to the energy security concerns that emerged in Europe after this first Russian-Ukrainian-European natural gas crisis, the EU launched a new policy in 2008.

On one hand, this strategy aimed to enhance the EU internal energy market in order to foster natural gas flows between EU Member States. On the other hand, it aimed to further diversify natural gas sources. This latter objective is served by the

construction of LNG receiving terminals in Central and South-East Europe and the pursuit of the fourth corridor (generally known as the Southern Gas Corridor) in order to bring natural gas from Caspian and Middle Eastern supplier countries to Europe without crossing Russia.

“The implementation of the Southern Gas Corridor was accelerated after a second major natural gas crisis between Russia and Ukraine occurred in January 2009.”

The implementation of this strategy –and particularly of the Southern Gas Corridor– was accelerated after a second major natural gas crisis between Russia and Ukraine occurred in January 2009. In fact, the consequences of this crisis were even worse than the previous one, as the transit of Russian gas through Ukraine was completely cut for two weeks, which caused humanitarian crises in several Central and Eastern European countries that were strongly

dependent on Russian gas supplies crossing Ukraine. This crisis paved the way for the promotion of the opening of the Southern Gas Corridor, with the original concept of the Nabucco pipeline.

Figure-2: The dawn of the Southern Gas Corridor: the original concept of Nabucco



Source: Author’s own elaboration (2013).

In the meantime, a great debate evolved with regard to the various shapes that the Southern Gas Corridor could have assumed. In fact, many pipeline projects progressively entered the Southern Gas Corridor race (i.e. TAP, TANAP; Nabucco West; SEEP; AGRI; White Stream). With the exception of White Stream (a submarine pipeline across the Black Sea linking Georgia-Romania-Ukraine) and AGRI (an idea by Azerbaijan, Georgia and Romania to build an LNG chain across the Black Sea), all these projects shared a common feature: transit through Turkey.

Figure-3: The evolution of the Southern Gas Corridor: new pipeline projects into the race



Source: Platts (2013).

In particular, Azerbaijan was the country most interested in the development of the Southern Gas Corridor, due to the investments already made on its Shah Deniz field and to the need for reaching a final investment decision (FID) for Shah Deniz Phase II (a decision that finally arrived on 17 December 2013). For this reason, Azerbaijan speeded up the process and rapidly conceptualized the Trans-Anatolian Pipeline (TANAP) project to carry future natural gas flows from Shah Deniz Phase II to Turkey. In December 2011, the governments of Azerbaijan and Turkey officially decided to advance the TANAP project.

Moreover, in June 2013 the Shah Deniz consortium chose the Trans Adriatic Pipeline (TAP) project to fill the gap between TANAP and the European market. TAP will thus constitute, together with TANAP, the concretization of the Southern Gas Corridor.

“Besides Azerbaijan, the Southern Gas Corridor is generally expected to carry natural gas to the EU from Turkmenistan, Iraq, and –in the longer term– Iran.”

The debate on the various infrastructural options of the Southern Gas Corridor has brought Turkey to the forefront of international natural gas markets, further enhancing its relevance in terms of future regional energy transit.

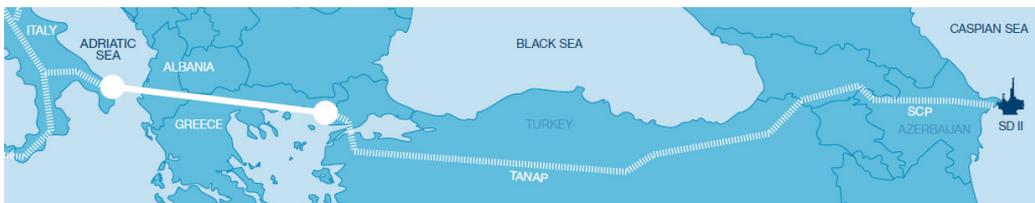
But is Turkey really likely to become a regional natural gas hub? In order to fully answer this question, it is necessary to provide a comprehensive overview on the future prospects of natural

gas cooperation in the region, particularly focusing on the prospects for the Southern Gas Corridor and the potential Eastern Mediterranean Gas Corridor.

The Southern Gas Corridor Between TANAP and TAP: What is Next?

As stated above, the ultimate infrastructural shape of the Southern Gas Corridor will likely be represented by the pipeline-tandem TANAP/TAP. In short, the 16 bcm/year of gas that will be produced in Shah Deniz Phase II will flow through a new parallel of the South Caucasus Pipeline (SCP-X) across Azerbaijan and Georgia up to the Turkish border. From here, the gas will flow through Turkey *via* TANAP, to reach the Turkey-Greece border. At this point, the 10 bcm/year of Shah Deniz Phase II gas devoted to the European market will flow *via* TAP through Greece and Albania to Italy, its final destination. The target date for the first gas exports from Shah Deniz Phase II to Turkey is 2018, while the one to Europe is 2019.

Figure-4: The “final” shape of the Southern Gas Corridor: TANAP and TAP



Source: TAP (2013).

Besides Azerbaijan, the Southern Gas Corridor is generally expected to carry natural gas to the EU from Turkmenistan, Iraq, and –in the longer term– Iran. But what should we expect regarding its potential development?

Turkmenistan

A “special relationship” is being established between Turkmenistan and China, and this liaison is likely to consolidate further in the future. However, given its world-class natural gas reserves, Turkmenistan could well be in the position to supply natural gas to Turkey and to the EU –in addition to

“It is possible to expect the KRG to export about 10 bcm of natural gas to Turkey by 2020-25.”

the major volumes targeting the Chinese market– but two major barriers will likely make such a development unfeasible, at least in the medium-term: the first is the current lack of interest of the European gas market due to its stagnant gas demand, and the second is the infrastructural problem related to the divergences existing between Russia, Iran, and Turkmenistan on the legal status of the Caspian Sea, and therefore on the construction of the Trans-Caspian Pipeline.

In order to try to bypass this problem, in 2010, Eni proposed to Azerbaijan and Turkmenistan a CNG (compressed natural gas) project that would permit the transport and transit of considerable volumes of Turkmen gas across the Caspian Sea to the coast of Azerbaijan, from where it would be transported through an overland pipeline to other destinations. At the time, this project was halted by Azerbaijan, as it did not want Turkmen gas to compete with its resources being developed. Such a project could be revived in the future if Azerbaijan would temporarily need additional volumes to fill the TANAP pipeline, while waiting for additional production in Shah Deniz. However, this solution will likely be very costly and very limited in both time and volumes.

For these reasons, the aspiration of Turkey and the EU to bring major volumes of Turkmen gas into the Southern Gas Corridor would probably need to be revised, at least until the dispute over the legal status of the Caspian Sea is finally resolved and the EU’s natural gas demand fully recovers, leading the EU to seek substantial volumes of additional gas imports.

Iraq

The development of associated natural gas reserves in the southern part of Iraq will follow the path of increasing oil production trends. The reduction of gas flaring will be crucial for this development, and the additional volumes of natural gas being produced could well be devoted to the domestic market in order to free-up additional volumes of oil for export.

The development of nonassociated natural gas reserves in the KRG region will first target the domestic market. In fact, the KRG has already more than tripled its 2015 target for installed natural gas-fired power generation capacity. However, in a second phase the KRG could well export part of its natural gas to Turkey. In particular, it is possible to expect the KRG to export about 10 bcm of natural gas to Turkey by 2020-25.

Iran

Iran is the perennial “elephant in the room” of the international gas trade, a country that could, one day, become a major game changer of international gas markets, but whose potential still remains fundamentally untapped due to a number of geopolitical and commercial reasons. The main reason for the current under-exploitation of Iran’s natural gas resources is clearly linked to the difficult political relations that have evolved over the last decades with the West. However, the history of international relations has shown that relations between major actors in the international system could rapidly shift if the political willingness to do so is there. An example of these sudden shifts is the rapprochement between the United States (U.S.) and China in the early 1970s, following great diplomatic efforts of the U.S. Secretary of State Henry Kissinger. Furthermore, the more recent political developments in the southern shore of the Mediterranean clearly exemplify the need to be able to think the unthinkable. Few people were able to predict the Arab Spring and its rapid development that radically changed the geopolitical equilibrium of the region in a structural dimension.

The dynamism of international relations exemplified by these two historical moments could also be applied to Iran and its relations with the other actors of the international system – notably, the U.S. As a matter of fact, the presidents of the U.S. and Iran talked for the first time since 1979 when Barack Obama called Hassan Rouhani on 27 September 2013. Moreover, after years of frustration and impasse in negotiations between Iran and six world powers (the five permanent members of the UN Security Council plus Germany, known as the P5+1), an Iranian nuclear deal was finally reached in Geneva on 24 November 2013.

This occurrence certainly represents just a first step toward a truly complete resolution of the Iranian nuclear issue, but it could be seen as a positive sign for the future. If these recent positive developments will have effective follow-up steps, great opportunities could open up in Iran, including with regard to the natural gas sector. Considering the geographical location of Iran’s natural gas reserves (predominantly concentrated in the Southern part of the country, offshore the Persian Gulf), such

a development will likely first interest the global LNG market before interesting the Turkish and European markets *via* pipeline. Furthermore, the first international pipeline that the country will likely develop will not target the European market, but the Asian market. In fact, Iran is already working on a pipeline to Pakistan, in order to export its natural gas not only to this country but also to India. Moreover, Chinese interest in Iran's natural gas reserves is also very strong, and Iranian natural gas exports to China will likely take place in the future as well. For these reasons it seems that in the medium-term Iran would hardly fit into the Southern Gas Corridor concept, as it will first target the global LNG market and Asian markets *via* pipeline.

Finally, it is necessary to outline that a full resolution of the nuclear issue will not automatically change the Iranian natural gas outlook in a short period of time, as a number of commercial barriers will likely remain on the table. In fact, in the energy industry there is a general awareness of the difficulty in developing energy projects in Iran, a difficulty mainly due to the complex institutional and regulatory environment of the country. In particular, the struggle for economic independence desired by Iran since the 1979 Revolution has led to very restrictive opportunities for participation by foreign companies, notably under the so-called buyback scheme.

“Iran is already working on a pipeline to Pakistan, in order to export its natural gas not only to this country but also to India.”

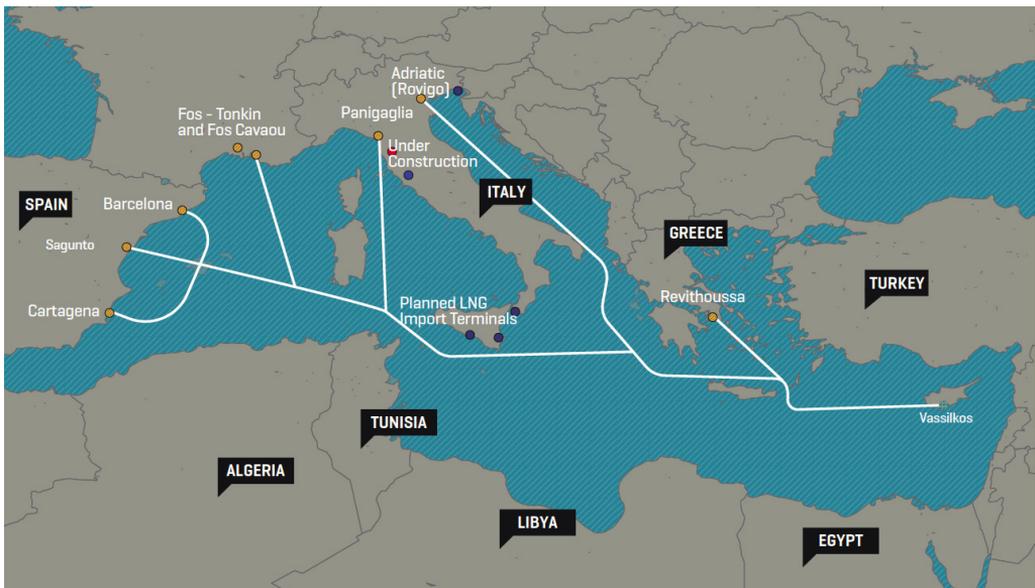
The Eastern Mediterranean Gas Corridor: Realism or Wishful Thinking?

Over the last few years the Eastern Mediterranean region has progressively attracted the attention of the world natural gas industry due to a series of natural gas discoveries off the shores of Israel and Cyprus. In particular, after the discovery of the Leviathan field in 2010 and the Aphrodite field in 2011, a wide debate emerged on the natural gas export potential of the region and on its consequential infrastructure options. But is this debate justified by the geological realities of the region? Looking at the volumes of current proven natural gas reserves, it seems that the Eastern Mediterranean region does not have the potential to become a world-class natural gas province. The two major natural gas fields in the region, Leviathan and Aphrodite, respectively enclose 535 bcm and 140 bcm of natural gas reserves, for a total of 675 bcm. Taking into consideration, for instance, that the recently discovered natural gas fields in Mozambique alone are estimated to enclose about 4,000

bcm of natural gas reserves, it is clear that with the current volumes the Eastern Mediterranean will unlikely become a game changer in world natural gas markets.

However, the natural gas resources being discovered in the region would well represent a game changer for the region itself, especially as far as natural gas cooperation is concerned. In particular, any monetization option of regional natural gas resources will likely be easier with close cooperation between Israel and Cyprus. For this reason, the proposed joint LNG plant at Vasilikos in southern Cyprus is currently seen by many stakeholders as the more cost-effective way of monetizing both countries' resources and achieving economies of scale.

Figure-5: The proposed LNG plant in Vasilikos and the Mediterranean regasification terminals



Source: Middle East Economic Survey (2013).

Following the decision of Israel's Supreme Court to confirm the legitimacy of the government's decision to export up to 40 percent of the country's natural gas resources, the natural gas developments in the country are likely to speed up. However, the downgrade of the Aphrodite field made by Noble Energy in October 2013 will likely slow down the evaluation of natural gas export options in Cyprus, at least until Noble Energy, Total, Eni, and Kogas obtain additional evidence regarding the country's natural gas resources from their exploratory activities. These developments are likely to take time and for this reason it seems reasonable to foresee that

any final decision on the potential Eastern Mediterranean natural gas exports will be postponed to 2015-16.

Turkey as a Regional Natural Gas Hub: Myth or Reality?

Having analyzed the current situation and outlook of natural gas-producing countries around Turkey, the prospects for the Southern Gas Corridor, and the outlook of the potential Eastern Mediterranean Gas Corridor, this essay's initial question can be addressed: Does Turkey have the potential to become a regional natural gas hub?

Looking at the medium-term horizon (up to 2020-25) the answer to this question is no: Turkey will likely not have the potential to become a regional natural gas hub. In fact, looking at the numbers characterizing the Southern Gas Corridor, within this time frame it will not be possible to expect more than 10 bcm (from Shah Deniz Phase II) to flow through Turkey to the EU. This amount certainly represents a historical step –as it will be the first concretization of the long-lasting Southern Gas Corridor odyssey– but it will not radically change the EU's natural gas security of supply architecture. In fact, 10 bcm by 2020-25 will basically represents less than three percent of the EU's natural gas import needs: a level equal to the one currently covered by Nigeria. Furthermore, looking at the medium-term horizon, direct involvement by Turkey in the potential Eastern Mediterranean Gas Corridor is very unlikely. In fact, as the previous section served to elucidate, the first natural gas exports from the region will likely occur in the form of LNG.

“Looking at the volumes of current proven natural gas reserves, it seems that the Eastern Mediterranean region does not have the potential to become a world-class natural gas province.”

Looking at the long-term horizon (after 2025-30), the answer to this question is highly uncertain. In this time frame, Azerbaijan could well be able to supply more volumes of natural gas to the EU, and Turkmenistan could be in the position to supply a considerable amount of natural gas (20-40 bcm/year) to Turkey and to the EU. Iraq could also be in the position to supply some natural gas volumes to the EU from KRG, and Iran could well have the potential to improve its natural gas supply to Turkey. Furthermore, if substantial additional natural gas reserves were to be discovered in the waters offshore Israel and Cyprus, the project to carry Eastern

Mediterranean gas to Turkey *via* pipeline could become commercially viable and politically feasible, but only if the Cyprus dispute were finally be resolved.

As illustrated by the hypothetical tone of these sentences, a number of factors will determine whether Turkey becomes a regional natural gas hub in the long-term. What seems to be certain is that the real underlying force of this development will not come from the supply side, but instead from the demand side. In the long-term, natural gas producing countries located around Turkey will likely have the potential to export significant volumes of gas to the EU, but this potential will become a reality –defeating current infrastructural, commercial, and political barriers– only if the EU market actually needs more natural gas supplies. In the words of an old English proverb, “Where there’s a will, there’s a way.”