

FPC Briefing: Turkey's Pivotal Role in Energy Supply

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Turkey holds a strategic role in regional energy supply, in particular for natural gas—set between the world's second largest natural gas market, continental Europe, and the substantial gas reserves of the Caspian Basin and the Middle East. Due to its geographical location, it stands as a key country in ensuring global energy security through the diversification of supply sources and routes, and the degree to which it can serve as not only a natural gas importer but also natural gas transit state will be essential for the region's energy security.

Turkey's own energy demand has been increasing in direct proportion to its GDP at an average of 6% per annum and is expected to reach 130 billion MW by 2023. Since 2002, the demand for electricity in Turkey grew 58% and the demand for natural gas grew 150%. Yet, as the country has very limited carbon resources and underdeveloped renewable sources, it imports 73% of its total energy consumption, primarily from Russia and Iran. Turkey's dependency rate on oil imports is 92%, while its natural gas dependency rate is 98%. However, given the imposition of sanctions on Iranian crude oil exports, it is likely that imports from Iran will fall in 2013. Russia, once the largest source country of Turkey's crude oil has fallen behind Iraq in terms of volumes and is now the third-largest supplier of crude oil to Turkey, signifying a change in energy supplies within the region.¹

Moreover, Turkey faces threats to its natural gas supply security as studies reveal that existing contracts will be insufficient in terms of supply/demand balance. By the end of 2014, the supply capacity under the existing long-term contracts will be 47.8 billion cubic meters (bcm)/year and under the high case scenario demand will reach 71.4 bcm by 2015. The rapid growth in demand has led to the concern for security of supply and a definition of the role for competitive markets for natural gas. Turkey has a high level of import dependency with means there needs to be further diversification, both in imports and infrastructure and overwhelmingly much needed liberalization within the market.²

The supply threats come with a silver lining—Turkey is viewed as having a great geostrategic importance as the energy corridor between the energy-consuming European countries and the energy-producing Central Asian countries. Moreover, the different physical nature of natural gas puts Turkey in an advantageous position as a potential gas transit state and hub for future decades.

Turkey as an Energy Corridor

Turkey's position between the main global energy suppliers and consumers has garnered it much attention from the international community with regards to the potential role it can play in global energy security. With the taking on of responsibilities through new international projects, Turkey's role as a regional energy hub is becoming more than just talk but actual reality. While there continue to be political implications for new energy route projects at both the regional and international levels and also energy infrastructure security, the Turkish government has showed its willingness to bolster the market by terminating the monopoly rights of state-owned oil and gas pipeline company BOTAS and through the amendment of the Electricity Market Law and Certain Laws, in which Liquefied Natural Gas (LNG) imports were liberalized and provisions were introduced for Spot LNG import activity.

¹ Percentages from Eurostat

² "Turkey's Natural Gas Market; Expectations and Developments 2012," Deloitte. April 2012

Currently, Turkey is fulfilling its duty as a corridor primarily through two different avenues; through its straits and its pipelines. However, both are quickly becoming overused and insufficient. The Turkish Straits, the Bosphorus and the Dardanelles divide Asia from Europe and supply Western and Southern Europe with oil from the Caspian Sea region. The Bosphorus is a 17-mile long waterway that connects the Black Sea with the Sea of Marmara, and the Dardanelles is a 40-mile long waterway that links the Sea of Marmara with the Aegean and Mediterranean Seas. An estimated 2.9 million bbl/d flowed through the Turkish Straits in 2010, almost all of which was crude oil. The ports of the Black Sea are one of the primary oil export routes for Russia and other former Soviet Union republics. Only half a mile wide at its narrowest point, the Turkish Straits are one of the world's most difficult waterways to navigate. With 50,000 vessels, including 5,500 oil tankers, passing through the straits annually it is one of the world's busiest chokepoints and Turkey has raised concerns over the navigational safety and environmental threats to the Straits.³ While there are no current alternate routes for westward shipments from the Black and Caspian Sea region, there are several pipeline projects in various phases of development underway.

Major pipeline projects realized and others under construction, which will inevitably contribute to Europe's energy supply security, are enhancing Turkey's role as an important transit country on the Eurasia energy axis and energy hub in the region. To this end, Turkey has concentrated its efforts for the transportation of Caspian oil and gas reserves to Western markets on the realization of the East-West Energy Corridor, often referred to as the Silk Road of the 21st Century. The pipeline projects linking the Caucasus and Central Asia to Europe will be essential for the region's integration with the West. Secure and commercially profitable pipelines will help bring stability and prosperity to the region.

The major Turkish gas pipelines include: Baku-Tbilisi-Erzurum Pipeline (BTE) with a capacity of 20 bcm per year with a route through Azerbaijan-Georgia-Turkey; Blue Stream Pipeline with a capacity of 16 bcm with a route to Turkey via the Black Sea; Tabriz-Ankara Pipeline with a capacity of 14 bcm with a route from Iran – Turkey; Romania-Bulgaria-Turkey Pipeline with a capacity of 17 bcm 630 Bcf with a route from Romania- Bulgaria- Turkey and Bursa-Komotini with a capacity of 12 bcm with a route from Turkey – Greece.⁴

However, despite these pipeline projects, for Turkey to function as a gas transit state, it must be able to import enough gas to satisfy both domestic demand and any re-export commitments as well as provide enough pipeline capacity to transport Caspian and Middle Eastern gas across Turkey to Europe. As Turkish demand increases, surplus capacity is expected to decline and it could disappear altogether within the next decade without additional investment.

The Uniqueness of Natural Gas and Turkey's Potential Role

The focal point of any discussion regarding Turkey's pivotal role in energy must be the potential role it will play in the future supply of natural gas. This is due to the different physical nature of natural gas and the remarkable qualities it has that has allowed it to penetrate so many markets. Natural gas burns cleanly and efficiently, has limited processing involved and the cost of recovering is relatively low. Its disadvantages in terms of transmission and storage are what makes Turkey's regional role essential. Pipelines are the most common method of transportation for natural gas, with the evolution of spot market in LNG having introduced a bit more flexibility; two percent of Turkey's natural gas imports in

³ TPAO

⁴ U.S. Energy Information Agency. February 1, 2013. <http://www.eia.gov/countries/cab.cfm?fips=TU>

2012 were spot LNG. Nevertheless, the reliance on pipe-lines makes Turkey's position a key state for which natural gas can be transmitted from producers to consumers. The situation becomes more interesting with the prospect of new pipeline projects, such as the Trans-Anatolian Natural Gas Pipeline Project (TANAP) and gas discoveries in areas such as Northern Iraq but the geopolitical situation in the region and the regulatory environment in Turkey make the situation more complex.

Following the publication of Law No. 5784 in 2008 on the Amendment of Electricity Market Law and Certain Laws, LNG imports were liberalized and provisions were introduced for Spot LNG import activity and in May 2009 EGEGAZ, a subsidiary of Colakoglu Group, started importing LNG through the LNG Terminal in Aliaga. These imports are being distributed for domestic consumption. Since LNG prices had fallen in international markets and became advantageous relative to the pipeline gas prices under long-term contracts, EGEGAZ imported a total of 3.079 bcm equivalent LNG in 2010, which accounted for 37.3% of Turkey's total LNG imports and 8.2% of total consumption in 2010. In 2011, however, spot LNG imports of EGEGAZ fell considerably to less than 1 bcm due to rising LNG prices and unfavorable competitive conditions.⁵ An important fact to note is that the Energy Market Regulatory Authority (EMRA) has introduced the requirement to receive the comments of BOTAS before approving new purchase contracts to be concluded by private companies with countries from which BOTAS does not import gas. The Board Decision may be deemed to reflect the concerns regarding the "take or pay" obligations under the purchase contracts of BOTAS and the establishment of more-than-necessary import connections, and thus the need to take measures to prevent public losses. The most significant obstacle before attaining the targets stipulated in the Law through contract releases is the requirement for an agreement between the source country and the company.

This situation was exemplified with the recent announcement by EMRA that the application for import license for Kurdistan Regional Government (KRG) gas by SiyahKalem, the only import license applicant, was not granted but instead passed to the Turkish Ministry of Energy for approval as the company was not able to provide the required agreement with the source country. Some experts have claimed that in the case of KRG, an agreement with KRG should be enough and no certificate of agreement is needed with Baghdad. However EMRA's decision to pass this decision onto the Turkish Ministry of Energy seems to have set a precedent that any company that will be looking to sign an import contract will need the approval of Ankara, who will most likely seek approval from both KRG and Baghdad. SiyahKalem would have been able to import natural gas from Iraq between 2014 and 2033 in the amounts of 700 million cubic meters to start, increasing to 3.2 billion cubic meters had the license application been approved.

Shah Deniz Gas

The second phase of the Shah Deniz field is currently under development and could be the first step towards a potential southern gas corridor to Europe. Construction of the TANAP pipeline from the Turkish-Georgian border to Turkey's border with Europe is expected to start at the end of 2013, and the project's first phase to be ready at the end of 2017 or early 2018. Turkey has a 20% stake in TANAP, while SOCAR holds 80%. Turkish government pipeline company Boru Hatlari Ile Petrol Tasima AS and Turkiye Petrolleri AO have a combined 20 percent. Socar plans to sell 12 percent to Statoil ASA and 5 percent to Total SA, the company said in 2012.⁶

⁵ EMRA Natural Gas Market Sector Report 2010

⁶ "BP Agrees to Join Tanap Gas Pipeline Project by Taking 12% Stake," January 23, 2013, *Bloomberg News*

The ambitious \$7bn pipeline across the length of Turkey is expected to reduce Europe's dependence on Russian energy, but it should be noted that there are currently no stipulations in the agreement preventing Turkey from diverting sources for domestic consumption. At Turkey's western frontier it will connect with one or both of the rival pipelines that European consortia are vying to build to carry gas from BP's giant field in Azeri waters of the Caspian Sea. Regional governments had been weighing an alternative plan to upgrade existing Turkish infrastructure. The pledge to press ahead with the new pipeline appears to counter concerns from European investors that the development of the supply route through Turkey might lag the construction of the onward pipelines into Europe. Two groups – the Trans-Adriatic Pipeline through Greece to Italy, backed by Germany's EON, Norway's Statoil and EGL of Switzerland, and the Nabucco West proposals for a line to Austria from Germany's RWE, other European energy groups and eastern European governments – are competing for the backing of the gas field's owners.

The new pipeline through Turkey – known as the Transanatolian Pipeline, or TANAP – will initially have capacity for 16bn cubic metres of Azeri gas annually. That would rise to 31bcm by 2020 with possible expansions to carry gas from Turkmenistan and Kazakhstan. It has also been suggested that the second phase of the Shah Deniz project in the Caspian might yield as much as 20-25bcm a year, far more than the 16bcm forecast by BP, its operator.⁷ The state energy companies of Azerbaijan and Turkey, which will jointly build TANAP, have stated that they are open for talks with BP on selling it a stake in a venture that will be a critical element of its investment plans at Shah Deniz.

Kurdistan Region of Iraq

There is an estimated 2.8 tcm (100 tcf) of gas in the Kurdistan Region of Iraq and international oil companies (IOCs) have committed \$10 billion investment in the region, with over \$2 billion committed to capacity building projects. The passage of the Kurdistan Oil and Gas Law in 2007 was a crucial step for the region. The Kurdistan Regional Government (KRG) argues that the law is in full harmony with Iraq's federal constitution, creating an investment friendly legal framework. According to the federal constitution's article 111 "Oil and gas are owned by all the people in Iraq in all the regions and governorates." As per the KRG's interpretation article 111 states that regions and governorates have ownership rights and powers and article 115 grants primacy to regional laws in case of a clash with federal laws.

The recent temporary halting of crude exports from the KRG, announced in April 2012, on the grounds of almost \$1.5 billion of missing export payments to KRG operators, is only one of the continuing disputes between KRG and Iraq's central government in Baghdad over the past 10 years. As opposed to the service agreements available for IOCs in the rest of Iraq, KRG offers production sharing agreements. The federal government argues that these agreements are illegal. A 2007 draft of a federal hydrocarbon law is deadlocked in Baghdad's parliament, while another draft, deemed unacceptable by the KRG, was passed in 2011 by Iraq's Council of Ministers, but has since been rejected by the legislative assembly.

The announcement in November 2011 of the entrance into the region of Exxon Mobil and the acquisition of six licenses led to further tensions between Erbil and Baghdad, which said Exxon Mobil should choose between its contracts in the south and the KRG. Since Exxon Mobil's entrance other IOCs such as Chevron and Total have followed suit.

⁷ Burgis, T. 'Azerbaijan and Turkey to start gas pipeline;' 18.09.2012. *Financial Times*

Turkey has gone from being a major adversary to being one of the Kurdistan Regional Government's largest trading partners. The proximity creates a natural corridor for the flow of investments in the KRG, an ever more important aspect given the region's landlocked status and the need to rely on its neighbors for access to global markets. Turkish firms are among the most active in the KRG across a wide range of sectors, with overall exports to Iraq reaching a volume of \$8.31 billion in 2011 and 70 percent of these exports directed to KRG, thus placing Iraq as the second largest export market after Germany. Despite tensions in the region and at times unstable relations between the governments resulting from continued cross-border attacks from Northern Iraq by the Kurdistan Worker's Party (PKK), trade relations and now the prospect of further energy ties are forging a new path for the two governments. While the regional balance of power may be a paradigm of Turkey-KRG relations, energy security puts pressure on Turkey's need for diversification.

Currently the existing gas pipeline is connecting to Dohuk's power plant. This will later extend to a new power plant that will be built across the border in Turkey and part of the power generated there will return back to Iraq for KRG and neighboring provinces. Additional gas, beyond the internal needs will be considered for exports to Turkey and an LNG plant in Ceyhan or transit by pipeline to Europe.

Currently the individual owner and operator of the only gas pipeline in KRG is Crescent Petroleum (184KM extending from the Khor Mor gas processing plant to Erbil Power Station, passing via the Chemchamal Power Station). Since gas is neither publicly nor domestically transacted, there is no price for it. Unlike other hydrocarbon products, gas does not have an indexed price entry, in PLATTS for instance. In many cases of gas price negotiations, the price of gas is calculated based on the concept of "alternative cost", i.e. if a certain power station uses diesel for fuelling their station, then the calorific price of diesel would be used to create a benchmark versus gas supply, normally with an incentivizing discount, given the end-user endures some capital expenditure on making changes to allow gas to be used (connectors, actuators, nozzles burners and a pressure reduction facility).

In the KRG, the primary objective is to earmark ample gas for power generation and possibly export the surplus. Given supply and demand figures, it is expected to see continued projects for gas pipelines and power stations for the next few years before any gas is tagged "surplus".

Turkey is also interested in the development of Iraqi natural gas reserves which are mostly located in Northern Iraq. Iraqi natural gas could easily be connected to the Turkish national grid through a pipeline to be constructed parallel to the Kirkuk-Ceyhan oil pipeline using the right of way of the latter. The extension of the Blue Stream Gas Pipeline to Ceyhan and thence to Ashkelon with a view to supplying Israel with Russian natural gas is also under consideration. The differences between the transportation methods of oil and gas—oil being pumped through a pipe and transported via tanker, while natural gas should be delivered to nearby, positions Turkey as a viable consumer and transit state within the region. The lucrative gas fields in KRG serve as a potential supply market but importation can only be guaranteed with an agreement between the country and the company. Therefore, diplomatic maneuvering will be necessary to ensure the support of Baghdad, the KRG government and Ankara making the support of Turkey is essential for the KRG to ensure it has an outlet for their natural gas supplies.

Moving Forward

Turkey holds a strategic role within the region's natural gas developments but due to inefficient contracts it is facing shortage threats in the future. In efforts to stage off shortage threats, the Turkish

government has taken a number of important steps to ensure future security in supplies. Turkey has signed a 10-year renewal on its contract with Algeria which will deliver 4 billion cubic meters of gas annually to Turkey. Also, it was recently announced that a Turkish company is in talks with Qatar for the construction of a LNG facility in Turkey. The planned terminal on the Gulf of Saros, an inlet in European Turkey, would have an annual capacity of 5 to 6 billion cubic meters (bcm) and could help supply Bulgaria and Greece, as well as help Turkey meet its own rising LNG demand. Also, earlier this year, it was reported that BOTAŞ had reached an agreement with Qatar for the import of an undisclosed amount of spot LNG, and, in addition to importing several deliveries from Qatari supplier RasGas to the Aliğa terminal, is considering to modify its Marmara terminal to accommodate Qatari Q-Max vessels.

While the government is working to increase LNG capacity and this is useful in increasing supply route, the necessity of additional pipelines must also be included in its strategy. A pipeline from KRG to Turkey, which could link to TANAP could potentially not only solve Turkey's shortage issues but also be the key in making it the main transit state within the region. Furthermore, with regards to pipelines, despite third party access to the transmission network of BOTAS initiated, there needs to be continued liberalization in order to ensure vibrant competition in the natural gas market. While a total of 4 bcm/year contract release has been carried out and four new importers entered the market, its market share remains to be much higher than the target rate provided in the NGML. While vast improvements have been made in Turkey's energy policy, in order for Turkey to take on a strategic role as an energy highway, it must capitalize on the potential opportunities present with natural gas.