



REPUBLIC OF TURKEY
MINISTRY OF FOREIGN AFFAIRS



TURKEY'S ENERGY STRATEGY

**Deputy Directorate General for
Energy, Water and Environment**

February 2008

TURKEY'S ENERGY STRATEGY

Turkey is geographically located in close proximity to 71.8% of the world's proven gas and 72.7% of oil reserves, in particular those in the Middle East and the Caspian basin. It thus, forms a natural energy bridge between the source countries and consumer markets and stands as a key country in ensuring energy security through diversification of supply sources and routes, considerations that have gained increased significance in Europe today.

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 central component of the East-West Energy Corridor is the ***Baku-Tbilisi-Ceyhan (BTC) pipeline***, which is a dedicated crude oil pipeline system that extends from the Azeri-Chirag-Deepwater Gunashli (ACG) field through Azerbaijan and Georgia to a terminal at Ceyhan on the Mediterranean coast of Turkey, bypassing the environmentally sensitive Black Sea and the Turkish Straits. The pipeline can transport up to 1 million barrels per day (approximately 1.5% of the world's oil supply), and at 1760 kilometers is the second longest of its kind in the world. The first cargo of oil, which had traveled through the BTC pipeline to Ceyhan, has been loaded onto a tanker on 4 June 2006.

On 16 June 2006, Kazakhstan has officially joined the BTC oil-pipeline project. A Host Government Agreement to that effect was signed on that day in Almaty by the Presidents of Azerbaijan and Kazakhstan, His Excellency İlham Aliyev and His Excellency Nursultan Nazarbayev, respectively. Under the agreement, Kazakh crude oil will be shipped to Baku across the Caspian Sea, and then pumped through the BTC pipeline to Ceyhan. A grand ceremony to mark the official inauguration of the BTC pipeline was held in Turkey on 13 July 2006 and as of 8 February 2008, the 374th cargo was lifted at the Ceyhan Terminal.

The BTC and the BTE Projects



From the energy security perspective, the *Turkish Straits* are of particular importance as around 3.7% of the world's daily oil consumption is shipped through the Turkish Straits. The amount of oil and oil products transported through the Strait of İstanbul has increased dramatically from 60 million tons in 1996 to 143.4 million tons in 2006. This figure is expected to reach around 190-200 million tons in 2009 due to the expected throughput from the Caspian Sea reaching the Black Sea in addition to the large amounts of Russian oil. In view of the heavy tanker traffic, as well as the physical characteristics and peculiarities of the Turkish Straits, a maritime disaster caused by a tanker carrying hazardous cargo seems inevitable sooner or later. In addition to the humanitarian and environmental perils, such a disaster would interrupt the regular flow of oil to world markets. The solution lies at the use of alternative oil export options that by-pass the Straits.

Energy companies are aware of the seriousness of the situation and they recognize that there is a limit to the amount of oil that can be transported through the Turkish Straits. A set of "*Voluntary Principles*" on by-pass pipelines was adopted in December 2000 by the Governments of the US and the UK as well as companies such as Chevron, Texaco, Conoco, Shell and BP and several NGOs.

Among the various by-pass proposals, the Turkish Government decided to support the *Trans Anatolian (Samsun-Ceyhan) by-pass oil pipeline*. The advantages of the project over its alternatives can be summarized as follows:

1. The proximity of Samsun to the oil outlets on the Eastern Black Sea will minimize the seaborne transportation of oil in the Black Sea.
2. The existing energy infrastructure in Ceyhan obviates the need for undertaking new and costly infrastructure investments.
3. It constitutes the most environmentally manageable by-pass option.

The ground breaking ceremony of the Trans Anatolian Pipeline was held on 24 April 2007 in Ceyhan.

The second component of the East-West Energy Corridor, namely the *Baku-Tbilisi-Erzurum (BTE) Natural Gas Pipeline*, has become operational as of 3 July 2007. Designed to transport natural gas from the Shah Deniz field in the Azerbaijan sector of the Caspian Sea, through Georgia and on to the Georgia-Turkey border, it is envisaged that the pipeline will export 6,6 billion cubic metres a year. It is also considered as the first leg of the *Trans-Caspian Natural Gas Pipeline Project* which will tap into the world's 4th largest natural gas reserves located in Turkmenistan and those in Kazakhstan. The Trans-Caspian Natural Gas Project is of particular urgency as it will contribute to the further diversification of routes and resources. From the supply security perspective, it is also of importance that Kazakhstan and Turkmenistan not become dependent on any one country or any one route for exporting their natural gas and oil to western markets.

The transportation of Caspian oil and natural gas resources via multiple pipelines to Europe through such projects as the interconnection of the gas pipeline networks of Turkey, Greece and Italy within the *Southern Europe Gas Ring Project* will also constitute an essential component of Europe's energy diversification efforts.

The incorporation of Turkey's energy network with that of the EU was realized with the conclusion of the Intergovernmental Agreement on the *Turkey-Greece Interconnector* signed in February 2003 and the Sale and Purchase Agreement between BOTAŞ and DEPA in December 2003. The trilateral Intergovernmental Agreement for the Turkey-Italy-Greece Interconnector was signed in Rome on 26 July 2007. In the plateau period, the volume of gas to be transported via Turkey is expected to reach 3 bcm and 8 bcm for Greece and Italy, respectively.

Prime Minister Erdoğan met with Greek Prime Minister Karamanlis on 3 July 2005 at Ipsala on the Turkish-Greek border for the ground breaking ceremony of the joint natural gas pipeline construction project.

The Turkey-Greece Interconnector has become operational as of 18 November 2007, following the inauguration ceremony held in Ipsala with the participation of Prime Ministers of both countries.

Efforts are also underway to construct the *Nabucco Natural Gas Pipeline* project which envisages the transportation of natural gas via Turkey through Bulgaria, Romania and Hungary to Austria. In this respect, Turkey welcomes the assignment of the former Dutch Foreign Minister, H.E. Jozias van Aartsen, as the EU Coordinator for the Nabucco Project.

Full construction and operation of the *Arab Natural Gas Pipeline* to carry Egyptian gas to Turkey via Jordan and Syria is scheduled for 2009.

Natural Gas Pipelines



Turkey is also interested in *the development of Iraqi natural gas* reserves. 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. Within this framework, a Memorandum of Understanding was signed between Turkey and Iraq on 7 August 2007 in Ankara in order to supply Iraqi natural gas to Turkey and via Turkey to Europe.

The extension of the *Blue Stream Gas Pipeline* to Ceyhan and hence to Ashkelon with a view to supplying Israel with Russian natural gas is also under consideration.

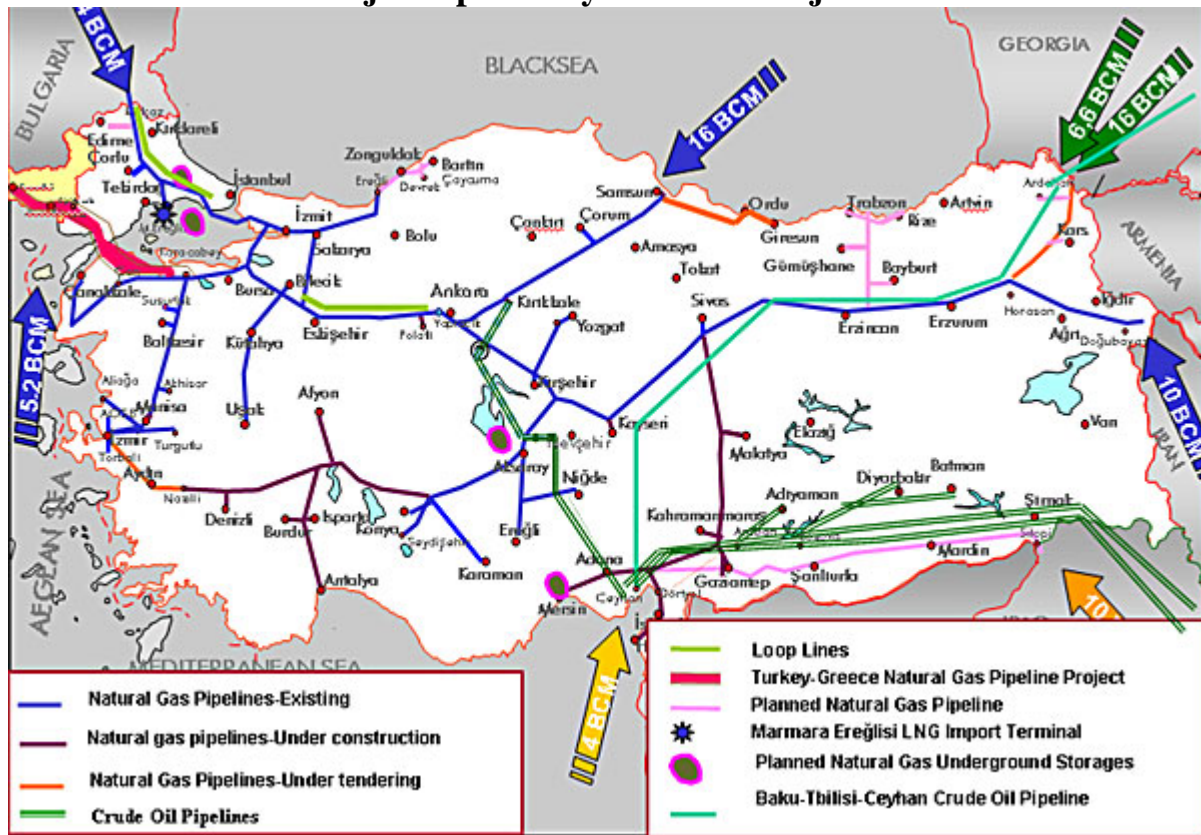
Turkey continues to import natural gas from Iran through the existing natural gas pipeline, which has a capacity of 10 billion m³/y. Moreover, a Memorandum of Understanding (MoU) related to cooperation in the fields of oil and gas was signed between Turkey and Iran in Ankara on 14 July 2007. Technical discussions continue among the relevant authorities.

Turkey's objective is to become Europe's fourth main artery of energy supply following Norway, Russia and Algeria through the realization of these projects. This will open up a new avenue for cooperation between Turkey and the EU that will also reinforce Europe's ties to Asia.

Moreover, through the completion of the projects cited above and more, it is anticipated that 6 to 7 % of global oil supply will transit Turkey by 2012 and that Ceyhan will become a major energy hub and the largest oil outlet terminal in the Eastern Mediterranean. The *Ceyhan Terminal* has already been designed to receive the crude oil reaching Ceyhan from Kirkuk, Baku and Samsun. One of the many advantages of the Ceyhan Terminal is the existence of an established and state-of-the art infrastructure that allows for loading VLCCs as well as ULCCs throughout the year.

These developments attest to the strategic role Turkey will increasingly assume as a major transit energy highway between the world's economic centers and sources of energy.

Major Pipeline System and Projects



The Ceyhan Terminal



Turkey's Energy Profile

With a rapidly growing economy Turkey has become one of the fastest growing energy markets in the world. Turkey has been experiencing rapid demand growth in all segments of the energy sector for decades. Recent forecasts indicate that the growth trend of 6-8 % per year will prevail in the energy sector in the following years. The primary energy consumption, which reached around 92 million tons of oil equivalent (toe) in 2006 will rise to 126 million toe in 2010 and 222 million toe in 2020.

The limits of Turkey's domestic energy sources in light of its growing energy demand have resulted in dependency on energy imports, primarily of oil and gas. At present, around 30 % of the total energy demand is being met by domestic resources, while the rest is being satisfied from a diversified portfolio of imports.

Turkey attaches utmost priority to further diversification of imports in both type and origin. Exploration and production activities are also being intensified in this context.

Turkish energy policy has made impressive progress after the Helsinki Summit of 1999 where Turkey was declared a candidate for accession to the EU. Turkey attaches great importance to more efficient and rational functioning of the energy sector for promoting the competitiveness of the national economy. Substantial progress has been achieved in restructuring and liberalizing the Turkish electricity and gas markets in pursuance with the EU Directives for the purpose of integration with the EU Internal Energy Market, since the enactments of the Electricity and Natural Gas Market Laws in 2001. With the Petroleum and LPG Market Laws, competition oriented mechanisms has been put into place.

An independent regulator, The Energy Market Regulatory Authority (EMRA) has been established to be in charge of regulation and supervision of the electricity, gas, petroleum and LPG markets.

Concerning renewable energy sources, the Law on the Utilization of Renewable Energy Sources for the Purposes of Generating Electricity has been adopted in 2005 for promoting electricity production from the renewable energy sources in liberalized energy markets.

In order to use energy efficiently, prevent waste, mitigate the burden of energy costs on the economy, and increase the efficiency in the use of energy

resources and to protect the environment, the Energy Efficiency Law was enacted on 2 May 2007.

Turkey aims at fully utilizing its indigenous hard coal and lignite reserves, hydro and other renewable resources such as wind and solar energy to meet the demand growth in a sustainable manner. Integration of nuclear energy into the Turkish energy mix will also be one of the main tools in responding to the growing electricity demand while avoiding increasing dependence on imported fuels. The Law on Construction and Operation of Nuclear Power Plants and Energy Sale (no. 5710) has been adopted on 21 November 2007. Nuclear power plants corresponding to a total installed capacity of 5000 MW are expected to be commissioned after 2012.