



The Evolution of Central Asian Energy

May 31, 2020 **Mamuka Tsereteli** *AFPC Defense Dossier*

Related Categories: Energy Security; International Economics and Trade; Caucasus; Central Africa

In the mid-1990s, independent Azerbaijan, Kazakhstan, and Turkmenistan—three littoral states of the Caspian Sea—started developing their hydrocarbon resources with the help of Western companies. Beginning in the early 2000s, exports of hydrocarbons from the region supported these countries' economic development, strengthened their national sovereignty, and bolstered the role of the broader trans-Caspian as an energy transit corridor.

While initial estimates of the energy reserves of the Caspian basin proved to be overly optimistic, the region still boasts world-class oil and gas reserves and some of the world's top energy fields. Kazakhstan is the richest country of the region in terms of energy resources: the on-shore Tengiz oil field in western Kazakhstan has recoverable oil reserves of up to 9 billion barrels, and the off-shore Kachagan field in the Kazakhstani sector of the northern Caspian Sea has recoverable reserves of up to 13 billion barrels. Turkmenistan, meanwhile, has the world's fourth largest natural gas reserves, with the Galkynysh field in the southeast of the country one of the world's largest with up to 14 trillion cubic meters of reserves.

In total, the region is home to almost three percent of the world's proven oil reserves, and produces about three percent of the world's crude. It also contains more than 12 percent of the world's natural gas reserves, while producing less than five percent of the global gas production in 2018.^[1]

These numbers underscore the nature of the energy business, as well as the geographic and geopolitical realities of Central Asia. Fundamentally, it is easier to monetize oil resources than natural gas resources. Oil is a global commodity that can be shipped to markets by pipelines, rail cars, and tankers, while natural gas is a predominantly regional commodity that usually travels via pipelines from source to end user. This pattern is changing gradually as liquified natural gas, or LNG, which can travel by sea, grows in importance. But Central Asia is a landlocked region, and access to the market for producing countries is a geographic, as well as geopolitical, challenge.

Three stages of development of Caspian energy resources followed the collapse of the Soviet Union. The first stage, stretching from the dissolution of the USSR in the early 1990s until the mid-2000s, was fueled by Western companies and the westward orientation of regional energy trade toward hungry consumers in Europe and America. This stage was supported by strong political leadership from the U.S., Turkey, and assorted regional governments. By contrast, the second stage—stretching from the late 2000s until 2016–2017—focused east, on the Chinese market, and was driven by China and its state-owned companies. The third stage, which is now underway, is marked by renewed investments from Western companies, allowing for a greater diversification of markets for regional suppliers. Throughout all three, the governments of energy-producing countries in the region have learned to balance the interests of their larger neighbors while gradually assuming greater ownership of their own geopolitical and economic decisions.

An initial look westward

The successful enlargement of the Transatlantic partnership—embodied by the expansion of NATO and growth of the European Union—marked the turn of the twentieth century. But this growth brought with it real-world needs. An enlarged Europe required alternative sources of energy to break its overwhelming dependence on Russia, and the Caspian provided a perfect fit. Europe had the purchasing power to buy Caspian resources, while the continental market was an exceedingly attractive one for Caspian producers eager to access the West.

Cementing this alignment, both the U.S. and Europe had made it a major priority to help the newly independent states of the former Soviet Union build their own sovereign economies. As a result, the U.S. initiated a multiple pipeline strategy in the region, which envisioned creating multiple new commercial pipelines crossing several countries, including Russia, but preventing any one nation from securing a stranglehold on the Caspian. Subsequently, the close collaboration of the U.S., Turkey, Azerbaijan, Georgia, and Kazakhstan in the implementation of this strategy played a crucial role in building a strong and lasting regional partnership. The construction of major oil and natural gas pipelines, in turn, made possible a radical regional break from Russian energy dominance. Several major pipelines that now connect the Caspian region to world markets represent the legacy of this strategy:

The Caspian Pipeline Consortium, or CPC, was commissioned in 2001 and connected the western Kazakhstani oil field of Tengiz to the Russian Black Sea port of Novorossiysk. In addition to oil from Tengiz, the pipeline currently also carries oil from the off-shore Kachagan and Karachaganak fields, as well as some Russian crude. The pipeline's initial capacity was 700,000 barrels a day.

Two other pipelines connected oil-producing fields in the Azerbaijani section of the Caspian Sea to the Black Sea port of Supsa and the Turkish port of Ceyhan. The smaller (100,000 barrel per day capacity) Baku-Supsa pipeline and the larger million-barrel capacity Baku-Tbilisi-Ceyhan (BTC) pipeline. In particular, the BTC was a project of major geopolitical significance, connecting Caspian resources from multiple Azerbaijani fields directly to the Mediterranean Sea.

Another important route is the so-called South Caucasus Gas Pipeline, also known as the Baku-Tbilisi-Erzurum natural gas pipeline. It started with the production of eight billion cubic meters (bcm) of natural gas annually at the Shah-Deniz field near Baku. Since 2007, it has been used to export gas to Georgia (2 bcm yearly) and Turkey (close to six bcm a year). This pipeline, and the natural gas from the Shah-Deniz field, has provided Georgia with a much-needed alternative to Russian natural gas supplies, and has helped Turkey to diversify its supplies as well.

The only unsuccessful project of the period was a planned Trans-Caspian Pipeline to connect the Eastern and Western shores of the Caspian with a large-scale natural gas pipeline, thereby strengthening the energy security of Turkey and Eastern Europe. However, political and commercial considerations—including the undefined status of the Caspian Sea, and overall Russian pressure on Turkmenistan's leadership [2]—prevented the pipeline from becoming a reality. Overall, however, the Western strategy, led by the U.S. and actively supported by Turkey and the regional producer and transit countries, resulted in the successful functioning of major export pipelines, advancing the economic and political interests of the countries in the Caspian region.

Turning east

China's rapid economic growth over the past two decades has required significant resources. Beginning in the mid-2000s, the planet's second largest economy began looking to Central Asia as a major source of energy, as a market for Chinese goods and a potential transit area to other parts of the world.

After the financial crisis of 2008–2009, China began to outpace Western countries and donor institutions in the scale of its financial aid to the Central Asian states. The Chinese financial aid and investments played an important role in the economic growth, and by extension in the political viability, of the region's existing governments. Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, and Turkmenistan all welcomed growing infrastructure connectivity with China, which allowed them to sell more of their resources to China. Beijing became the major trading partner for the region, and energy export represented a major part of the growing trade turnover.

Two infrastructure projects in particular greased the skids for increasing energy exports to China from Kazakhstan and Turkmenistan. The first, and oldest, is the Kazakhstan-China oil pipeline, which was built in several phases beginning in 2003. The pipeline system originates in western Kazakhstan and ends in Alashankou in China's northwest Xinjiang region, with a capacity of 400,000 barrels a day (or 20 million tons a year). The second is the Turkmenistan-Uzbekistan-Kazakhstan-China natural gas pipeline, which was completed in 2009 and consists of three parallel lines. Currently, these three routes allow for the transshipment of 55 bcm of natural gas annually to China [3]—up to 35 bcm from Turkmenistan, as well as up to 10 bcm each from Uzbekistan and Kazakhstan.

In the latter case, China is clearly benefiting from the lack of export infrastructure from Turkmenistan to European markets. The only available option is shipping gas via Russia, but Russia prohibits free commercial access of its pipeline system for Turkmen gas. In the past, Russia used to buy Turkmen gas at lower prices, and then resell it to other customers at much higher ones—something that served as a significant source of tension in bilateral relations. After the start of construction of the Central Asia-China pipeline in 2007, Russia signed an agreement with the Turkmen government, committing to larger purchases of Turkmen gas at fixed prices. But with the fall of energy prices in 2008–2009, the Turkmenistan-Kazakhstan-Russia pipeline suspiciously exploded, preventing any Turkmen export to Russia for a period of several years. Since 2019, Russia has been buying about five bcm annually from Turkmenistan, but Turkmenistan is desperately searching for alternative markets in order to break its dependency on unreliable and discounted markets in Russia, Iran, and China.

One such diversification project, the Turkmenistan-Afghanistan-Pakistan-India Pipeline (TAPI), has been under discussion for over twenty years. Construction of the 1,127-mile pipeline finally began in 2015 at the Galkynysh gas field in southeastern Turkmenistan, with the route projected to run through central Afghanistan and Pakistan, ultimately terminating in Fazilka, India. The eventual capacity of the project is expected to be approximately 33 bcm per year, of which Afghanistan will receive [5] 1 bcm, while Pakistan and India would each receive 13.9 bcm. In 2018, representatives from Turkmenistan, Afghanistan, Pakistan, and India gathered in Herat, Afghanistan to inaugurate the pipeline. But not much progress has been achieved since, and it appears that more legal and bureaucratic delays lie ahead.[4] The absence of a strong commercial sponsor for the project makes its future uncertain.

For Turkmenistan, the Trans-Caspian option of sending natural gas to Europe remains the greatest potential source of reliable export revenue, as well as providing the political benefits of integration with more stable actors in the global economy. This option also allows greater regional integration between Eastern and Western shores of the Caspian Sea and between the Caspian Sea, the Black Sea, and the Mediterranean basin.

Broadening and diversifying

Beginning in the second decade of this century, two major expansion projects emerged in both the west and east of the Caspian region.

In the east, the CPC expanded to 1.4 million barrels a day in 2017, and is slated to reach a daily capacity of 1.6 million barrels by 2023. The pipeline shipped 1.35 million barrels of oil a day in 2019. Chevron, the key shareholder and the operator of the Tengiz field, initiated the \$37 billion expansion project (the cost of which is now estimated at \$45 billion⁵), to be completed in 2022, which will allow larger volumes of the field's crude to reach European refineries.

In the west, the BP-led Shah-Deniz Consortium manages the backbone project for the Caspian natural gas connection to Europe. The \$45 billion expansion, the largest energy project in the world between 2014–2020, allows production of additional 16 bcm per year. The largest recipient of the gas will be Italy. The system of pipelines will link an upgraded South Caucasus Pipeline to the Trans-Anatolian Pipeline (TANAP) in Turkey, which will bring Azerbaijani gas to the western border of Turkey, and from there to European markets via the Trans Adriatic Pipeline (TAP) that stretches between Greece, Albania, and Italy. The first supply of gas reached TANAP in Turkey in 2018. Initially, 10 bcm of natural gas will be exported through TAP each year, but annual capacity can be increased to 20 bcm.[6] Once fully completed, this chain of infrastructure projects will directly connect natural gas fields in the Caspian to EU markets for the first time. The importance is difficult to overstate. Although initial volumes will cover only about two percent of total European demand, the project has the potential to expand substantially based on increased volumes from other fields in both Azerbaijan and Turkmenistan.

An analysis of the energy landscape of Central Asia would be incomplete, however, without mentioning the region's significant coal, uranium and hydro-power resources. The region has potential to emerge as a major power generation hub in its own right. In addition to ongoing work on greater connectivity between neighboring states, a major project is now underway to supply power-starved Afghanistan and Pakistan with electricity from hydro-power stations in Kyrgyzstan and Tajikistan via the \$1.2 billion, 1,200 km CASA-1000 power line. This project will strengthen the economic position of the two non-oil and gas producing countries while facilitating regional collaboration and interconnectivity.

Ceding the advantage

For more than two decades, the United States has invested significant resources in strengthening the political and economic sovereignty of the countries of the Caspian. This effort facilitated the development of vibrant trade and transit between the Caspian region and the Black Sea and Eastern Mediterranean. Resource-rich Azerbaijan, Kazakhstan, and Turkmenistan, as well as transit and consumer countries like Georgia and Turkey, are the major beneficiaries of the resulting (and expanding) pipeline, railway, highway, and port infrastructure. Enlargement of NATO and the EU brought more security and economic development to the western shores of the Black Sea and to Bulgaria and Romania, countries that also benefit from transit and trade links with the South Caucasus and Central Asia.

But gradually, due to declining U.S. interest and a waning American presence in Central Asia in recent years, China has emerged as a main beneficiary of these investments, using its Belt and Road Initiative (BRI) as an instrument to advance its geopolitical presence and interests. That represents a clear challenge for the U.S., because the westward orientation of the region's energy resources is in America's long-term strategic interest. As such, the U.S. needs to demonstrate renewed regional leadership and work with producer, consumer and transit countries on the design and implementation of the missing large-scale infrastructure—like a new, larger scale pipeline connecting Turkmenistan and Azerbaijan to Europe—that can spur even greater integration of the region with the West in the years ahead.

ENDNOTES

[1] British Petroleum, BP Statistical Review of World Energy 2019, n.d., <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2019-full-report.pdf>

[2] For more details on the status of the Caspian sea and the new Convention, see "Landmark Caspian Deal Could Pave the Way for Long-Stalled Energy Projects," World Politics Review, September 7, 2018, <https://www.worldpoliticsreview.com/trend-lines/25806/landmark-caspian-deal-could-pave-the-way-for-long-stalled-energy-projects>

[3] China National Petroleum Corporation, "Central Asia-China Gas Pipeline Operational," September 2014, <http://www.cnpc.com.cn/en/FlowofnaturalgasfromCentralAsia/FlowofnaturalgasfromCentralAsia2.shtml>.

[4] Catherine Putz, "More TAPI delays, This Time in Afghanistan," The Diplomat, January 28, 2020, <https://thediplomat.com/2020/01/more-tapi-delays-this-time-in-afghanistan/>
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[5] Trans Adriatic Pipeline, "Shah Deniz Consortium selects the Trans Adriatic Pipeline (TAP) as European export pipeline," June 28, 2013, <https://www.tap-ag.com/news-and-events/2013/06/28/shah-deniz-consortium-selects-the-trans-adriatic-pipeline-tap-as-european-export-pipeline>