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Pathways of Energy: China's Strategic Relationships in Central Asia – Turkmenistan

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Abstract

The present study explores the evolving dynamics of Sino-Turkmen energy cooperation, outlining the strategic importance of Turkmenistan as a major gas supplier and China's increasing reliance on this partnership for energy security. The basis for this collaboration is constituted by comprehensive agreements, including the General Agreement on Gas Cooperation, which was signed in 2006. This agreement paved the way for the construction of the Central Asia-China Pipeline, thus allowing Turkmenistan to diversify its energy exports beyond Russia. The trade of natural gas between the two countries has been a prominent feature, with China emerging as Turkmenistan's principal buyer by 2011. However, a considerable proportion of the gas exported to China is utilized to settle debt obligations, thereby engendering financial intricacies and latent risks due to the volatility of gas prices. This part of the analysis series examines the energy relations between China and Turkmenistan, as well as the possibilities for energy cooperation between the two countries. It also summarizes and outlines the energy cooperation between China and Turkmenistan, as well as between China and Kazakhstan.

Keywords: Turkmenistan, China, economy, energy, cooperation

Introduction

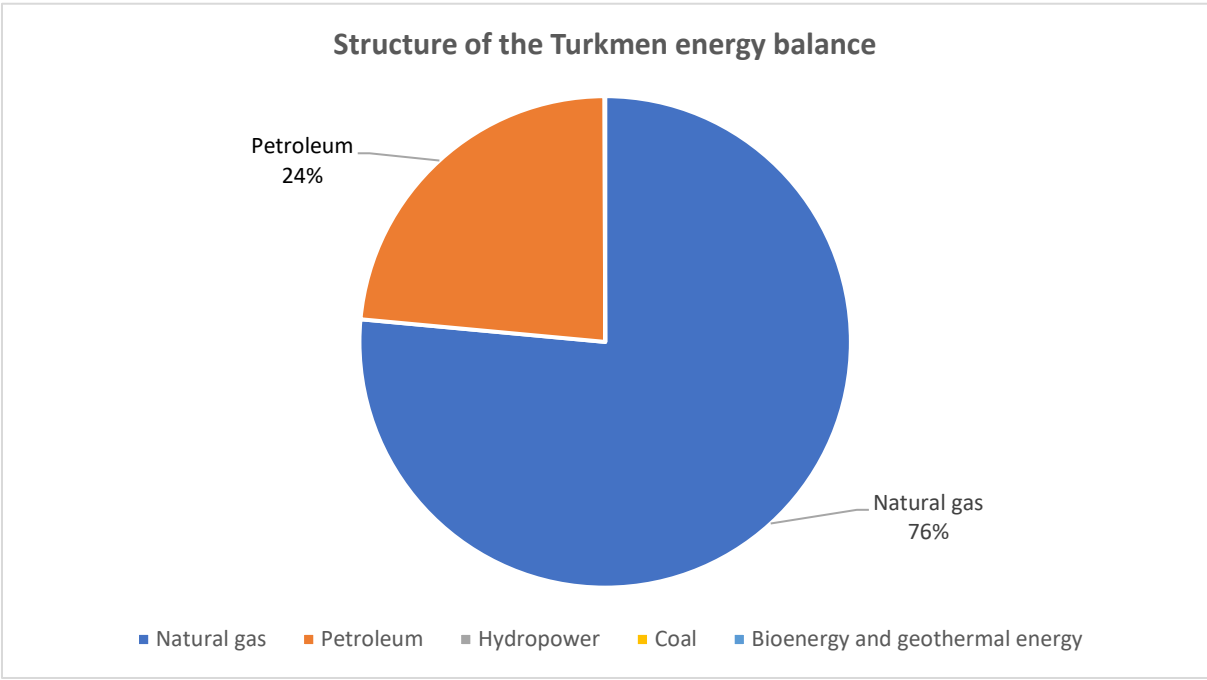
Turkmenistan is surely the main gas supplier to the east, and China has been building stronger energy ties with this nation since the late 2000s. Moreover, this partnership has become increasingly important for China's energy security. BP's 2018 estimates show that Turkmenistan has gas reserves of 19.5 bcm¹, which further places the country fourth in global rankings. This reserve capacity itself demonstrates Turkmenistan's significant position in the world energy market. Turkmenistan and China have surely strengthened their energy cooperation through efficient natural gas delivery in large amounts. Moreover, this partnership has made China the main economic and trade partner of Turkmenistan. In 2006, both countries actually signed a General Agreement on Gas Cooperation that definitely made Turkmenistan's trade ties with China stronger after the Turkmen president Niyazov's time. This gas agreement actually allowed China National Petroleum Corporation (CNPC) to explore and extract gas reserves in eastern Turkmenistan. The deal definitely prepared for building the Central Asia-China Pipeline. Basically, China is helping Turkmenistan reduce its dependence on Russia by becoming the same kind of essential partner through diversification efforts. In 2009, we are seeing that the Central Asia-China Gas Pipeline was completed, and this allowed Turkmenistan to end Russia's control over its gas exports. Before this, only Russia was buying most of Turkmenistan's energy. We are seeing China's energy partnership with Turkmenistan making the country more important only because China has strong diplomatic power and needs more natural gas for its growing economy.

In the past decade, natural gas trade between the two countries has been the most significant

¹ Billion cubic meters of natural gas (non SI abbreviation: bcm) is a measure of natural gas production and trade. Some definitions cite volume, others energy content.

feature of Sino-Turkmen energy cooperation. Turkmenistan obtains most of its income from exporting natural gas to China. Having entered Turkmenistan's gas market in 2009, China initially purchased a substantially lower amount of gas than Russia, its main buyer. In 2010, China acquired less than 5 bcm of Turkmen gas, which lagged behind Russia's 10 bcm and was slightly less than Iran's 6 bcm. Nevertheless, China soon surpassed Russia and Iran in 2011 to become the principal buyer of Turkmen gas. By 2018, this figure has risen to 33 bcm.

Despite these close trade relations, the natural gas sold to China cannot be viewed solely as a source of revenue, as a significant portion of it is used to fulfill the country's debt obligations to China. Since Turkmenistan's primary creditor is China, a portion of its debt is likely being paid back through the exchange of gas at current market rates as part of a loan-for-resources arrangement. The exact price of the gas however remains undisclosed due to a lack of transparency. Given the higher cost of Turkmen gas at the time of the agreement, there exists a persistent risk of fluctuating prices and the need to provide additional gas to China to satisfy the debt's value. This excessive reliance on China has therefore prompted Turkmenistan to seek alternative energy supply routes such as the TAPI pipeline² and the Trans-Caspian pipeline.



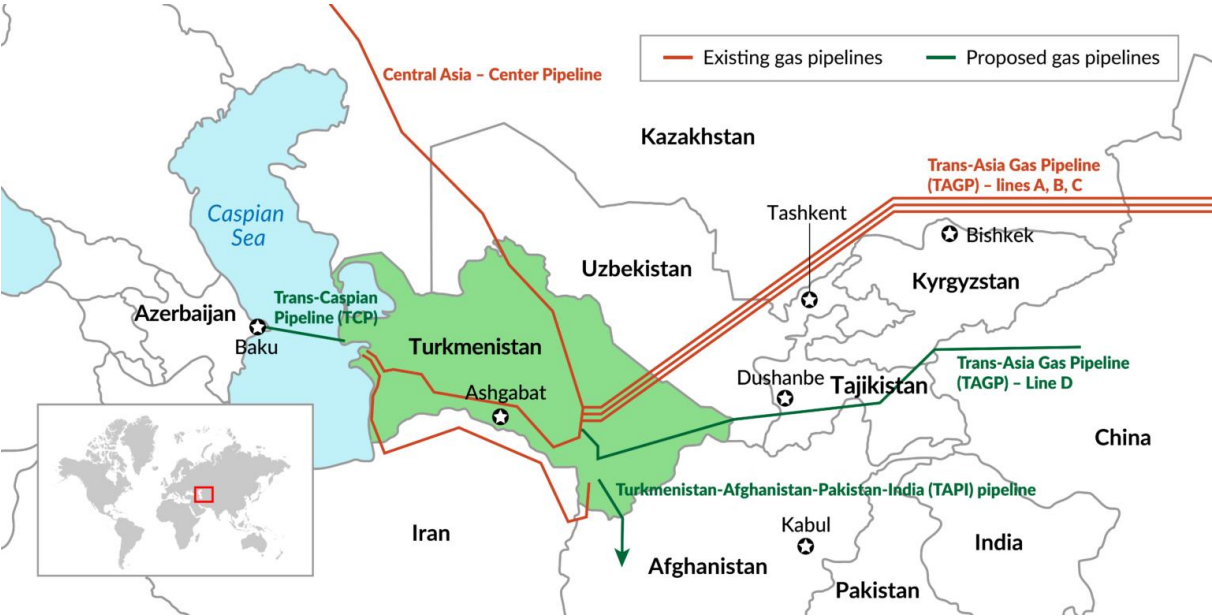
Source: own collection based on International Energy Agency

China's significant contribution to energy cooperation with Turkmenistan is also evident through its infrastructure projects in the country. China has been offering funding to the

² TAPI pipeline – The Turkmenistan–Afghanistan–Pakistan–India Gas Pipeline, also known as Trans-Afghanistan Pipeline, is a natural gas pipeline being developed by the Galkynysh – TAPI Pipeline Company Limited with participation of the Asian Development Bank. The pipeline will transport natural gas from the Galkynysh Gas Field in Turkmenistan through Afghanistan into Pakistan and then to India.

Caspian states to aid in the development of energy reservoirs and build up the necessary infrastructure to ensure stable prices for gas imports within the context of oil/gas loan agreements. In 2006, China [became](#) a major importer of natural gas, and its demand for the resource continued to rise exponentially, which resulted in an agreement signed between China and Turkmenistan under which China was obliged to provide USD 29 million in exchange for 30 bcm of gas each year over the next 30 years. Natural gas supplies were then delivered to China via the Central Asia-China gas pipeline launched in [2009](#). Furthermore, the two sides agreed to develop the Amu Darya River’s neighbouring gas deposits from which the Central Asia-China Gas Pipeline derives its main resources as part of their collaboration in the upstream business. The agreement resulted in initiatives to expand the [Central Asia-China Gas Pipeline](#)’s capacity, which included the construction of Line B and Line C. With the completion of Line B in 2010, the feasibility of the 30 bcm/year became evident towards the end of 2011. After the completion of Line C in 2015, the pipeline was able to transport 55 bcm/year to China, which accounted for around 20 percent of the nation’s annual gas consumption. Since these gas supplies allowed China to reduce its dependence on standard coal by around 73 million tonnes, [China agreed](#) to the subsequent construction of Line D. The Line D is intended to transfer gas from Turkmenistan's Galkynysh or South Yolotan fields by passing through Uzbekistan, Tajikistan and Kyrgyzstan before finally arriving in Xinjiang’s Wuqia County in China. Currently, the project remains mired in setbacks and postponements over the past few years. However, once this phase is completed, it is [forecast](#) to boost the Central Asia-China Gas Pipeline’s overall capacity to 85 bcm/year.

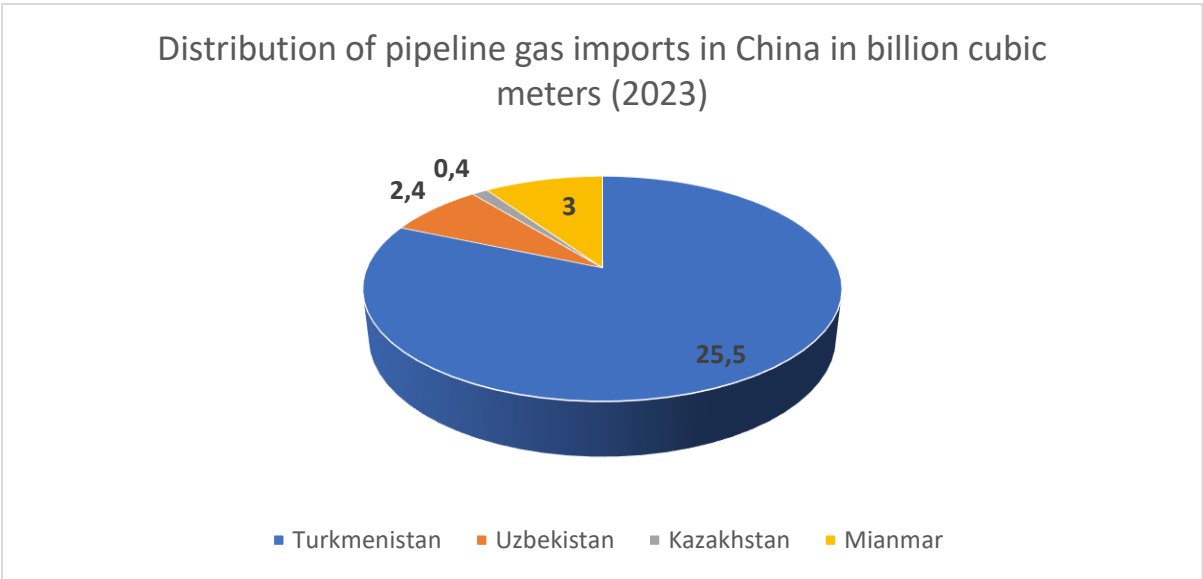
Existing and Proposed Gas Pipelines in Turkmenistan



Source: Gis Reports, 2019

The most important development in relation to investments in the context of Sino-Turkmen energy cooperation in recent years is reflected in a 30 year production sharing agreement (PSA) signed between the two countries in mid-2017. The initiative encompasses significant areas

such as the Samantepe gas field, which holds around 5 million tons of gas condensate and 100 bcm of gas. As part of the initiative, Chinese firms quickly worked on activating both old and new production wells located in the Samantepe region, so as to secure and increase the flow of natural gas from the area. Thus far, CNPC has reportedly allocated up to USD 4 billion in the project.



Source: BP Statistical Review of World Energy

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An analysis of Turkmenistan's gas exports reveals that the country's exports reached their zenith in 2008 and have not since recovered to those same levels. According to the most recent [data](#) (by The Energy Institute Statistical Review of World Energy), the export infrastructure capacity of Turkmenistan is 124,5 bcma (cubic meters per annum), which is considerably higher than the country's current natural gas exports. With respect to the nation's geographical circumstances, it is important to note that it is landlocked; however, it possesses a considerable degree of export capacity. The route to China, which is, in fact, Turkmenistan's primary export market, is not being utilized effectively. Despite the potential for substantial financial gain, this route remains partially closed. For instance, in [2023](#), the Central Asian Gas Pipeline (CAGP)

itself possessed over 17 bcma of spare transport capacity for further expansion. The existing capacity encompasses the CAGP, the Central Asia-Center Pipeline, and the aforementioned interconnectors with Iran. It is evident that the existing and approved capacity encompasses the current capacity, in addition to Line "D" of the CAGP. Furthermore, this amalgamation signifies the comprehensive operational and sanctioned infrastructure presently accessible. The planned capacity encompasses the Central Asia-Center Pipeline, Iran interconnectors, and the initial phase of the TAPI project, with an estimated capacity of 11 billion bcma, in addition to a smaller Trans-Caspian gas link with an estimated capacity of 5 bcma.

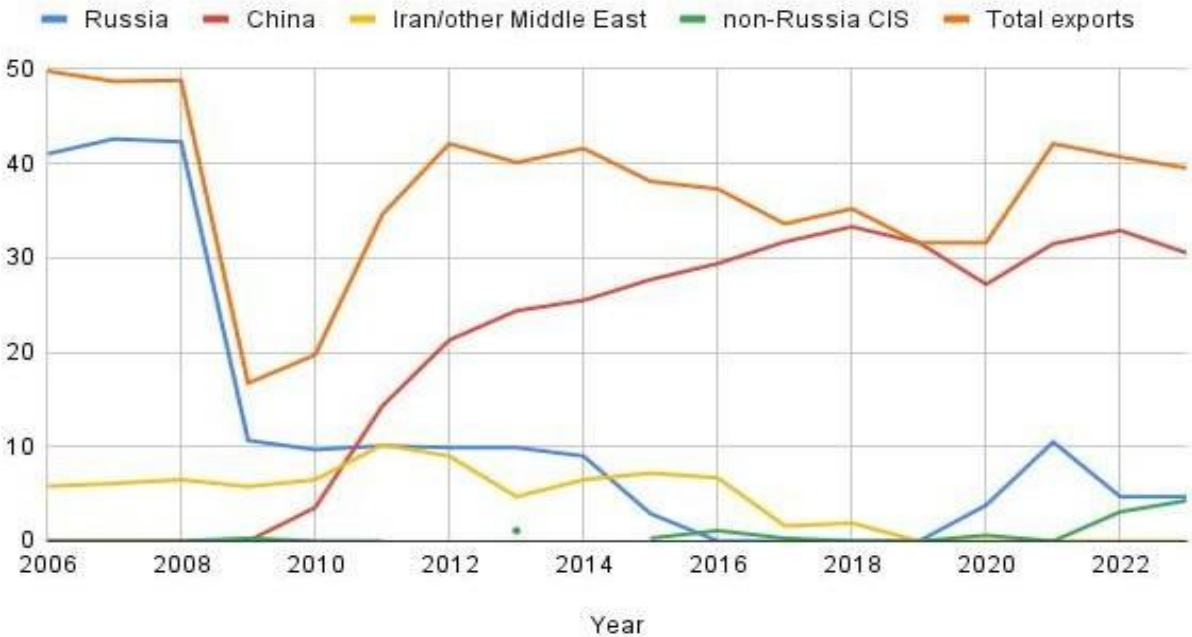
Two primary challenges are undoubtedly hindering the swift escalation of gas production and exports. Furthermore, these issues generate substantial impediments to the industry's growth.

In accordance with prevailing policies, there has been a decline in investment in the upstream and midstream sectors, attributable to stringent restrictions on foreign investment.

It is evident that the economic, political, and policy challenges currently faced by Turkmenistan are hindering its capacity to augment its exports. Furthermore, these same factors are impeding the country's capacity to diversify its export portfolio to other nations.

Turkmenistan maintains an economy that is largely closed off to external influences, with restricted access to its onshore gas sector being permitted exclusively through service contracts. The nation's legal framework does not currently allow for additional foreign investment in this specific upstream sector. According to the extant [data](#), the CNPC's Bartyrlyk production sharing agreement (PSA) represents the sole known exception to this matter. It is evident that this Public Service Announcement was merely a component of a more extensive agreement between China and Turkmenistan, wherein China committed to providing financial resources and undertaking the construction of the Central Asian Gas Pipeline.

Turkmenistan’s natural gas exports: key destinations (bcm)



In accordance with the established regulations, investors are permitted to submit applications

for PSAs concerning the offshore Caspian fields that possess limited resources, as these blocks are subject to more lenient regulations. It is evident that Turkmenistan's foreign direct investment receipts are less substantial than those of Kazakhstan, despite its strategic importance as a regional hub for energy resources. This discrepancy persists despite the global significance of Turkmenistan's oil and gas sector. In 2023, Kazakhstan received a total of USD 157.2 billion in foreign direct investment, while Turkmenistan received USD 42.9 billion. It is evident that foreign direct investment inflows into these resource-rich nations undoubtedly mirror investments in their primary energy sectors.

Prospects in the China-Turkmenistan Energy Cooperation

Although Turkmenistan aims to expand its natural gas export markets beyond China in order to reduce its reliance on the country, China is expected to remain its primary customer in the foreseeable future. China's importance as an energy trade partner was reinforced in June of 2022 when President Serdar Berdymukhamedov highlighted the critical value of the Central Asia-China gas pipeline. This reality is further demonstrated by the recent opening of the gas-storage facility in the Gadyň field in 2022, which forms a section of the vast Bagtyyarlyk oil field currently undergoing development as part of production-sharing pact with CNPC. Berdymukhamedov points to the facility as a significant accomplishment in his efforts to create employment in the country, as it will process 5.5 bcm of gas per day to be delivered to China. Furthermore, Moscow's efforts to secure the proposed [Power of Siberia-2 pipeline](#) to compensate for reduced gas sales to Europe due to Russia's operation in Ukraine have given Beijing added leverage over Turkmenistan and its Central Asian counterparts for the prolonged Line D project. As Chinese state officials have pointed out, the Line D project has been undermined by issues arising from discussions on pricing and technical obstacles. Keen on maintaining economic stability and the flow of revenue from gas sales, Turkmenistan may be more inclined to accelerate negotiations with China by offering more favorable terms in the Line D project to ensure that China continues to prioritize it over Power of Siberia-2 pipeline. The Chinese leadership's eagerness to complete Line D could also be witnessed at the inperson summit of Central Asian leaders held in Xian in May during which President Xi Jinping hailed the need to advance the project. China's willingness to bolster energy ties with Central Asian state as part of the BRI in recent months and its increased leverage to advance Line D due to Moscow's push to construct its second [Siberian pipeline](#) suggest a [more robust](#) energy trade relationship between China and Turkmenistan in the longrun.

On the other hand, regular disruptions in the transfer of Turkmen gas in recent years have called the stability of China-Turkmenistan energy relations into [question](#). In the winter of 2017–18, gas delivered via the Central Asia-China gas pipeline to China was reduced by 50 percent as a result of frequent equipment malfunctions in Turkmenistan. This compelled China to significantly increase its imports of LNG from other countries, causing an unprecedented spike in global LNG prices. Turkmenistan once again halted its gas exports to China due to extreme weather conditions in January of 2023, prompting Ashgabat to implement a new round of constitutional revisions which reinstated former President Gurbanguly Berdymukhamedov and demoted his son. This further fueled uncertainty regarding the stability of the secretive nation.

China's maritime LNG import capacity may drive competition with land-based pipeline routes, such as those in Central Asian countries, and provide Beijing with a lever over both its gas suppliers and Ashgabat and Moscow. This scenario may likewise prompt Beijing's partners in the West to push China into making more significant commitments to LNG purchases, in order to give them leverage in their energy dealings with Beijing and deprive Moscow of its revenues amid the Ukraine conflict. These developments could indirectly impact China's commitment to Turkmen gas imports. While the construction of Line D is increasingly likely, it all hinges on whether Ashgabat has the necessary governance capabilities to deliver the agreed-upon gas volumes. The future trajectory of bilateral trade between China and Turkmenistan will depend on how these challenges are navigated and resolved.

Summary

When we examine energy cooperation between China and Kazakhstan, and also between China and Turkmenistan, it surely shows that China's position in the Caspian region will continue for a long time. Moreover, this partnership clearly indicates China's lasting influence in this important energy area. China surely depends on both countries to meet part of its energy requirements. Moreover, their strategic partnerships under the Belt and Road Initiative make this relationship even stronger. Petroleum trade is one defining aspect of Sino-Kazakh energy cooperation. This trade itself has further strengthened the energy partnership between both countries. China has been buying more oil from Kazakhstan since the early 2000's, but oil imports themselves declined further in the 2010's. As per the trade data, Kazakhstan depends more on oil exports to China regarding its economy than China depends on importing Kazakh oil. This shows an unbalanced trade relationship between both countries.

Basically, China has done many infrastructure and investment projects in Kazakhstan that developed the same oil refineries, pipelines, and power lines there. Moreover, as per recent data, China's oil production share and total investments regarding this sector have dropped significantly in the past few years. The energy partnership surely brings benefits, but China's preference for Russian oil creates political challenges for Kazakhstan. Moreover, Kazakhstan's growing debt problems add economic pressure on the government. China and Kazakhstan can actually work together on energy projects because Chinese banks are definitely cooperating with international development banks. They are actually focusing on financing new clean energy projects in Kazakhstan. Basically, China wants to develop renewable energy in Kazakhstan, making it the same crucial partner that helps Kazakhstan handle pressure from Russia in energy trade.

China became Turkmenistan's main gas customer in 2011, moving further from its earlier position as a small importer. This change shows how the energy cooperation itself has grown between the two countries. Turkmenistan owes money to China, so it uses some of its natural gas exports to pay back this debt. This arrangement further helps Turkmenistan manage its financial obligations to China itself. Basically, this has made Turkmenistan search for different markets to sell in the same way. Further, as per the energy partnership, China and Turkmenistan are also working together regarding infrastructure projects. China's construction of the Central Asia-China gas pipeline with Line B and C extensions further enabled Turkmenistan to supply

large quantities of gas to China. The pipeline system itself became the main route for gas delivery between the two countries. Moreover, line D construction appears likely, but gas supply disruptions and political instability in Turkmenistan itself create challenges. These issues further add uncertainties to the energy partnership.