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MCC CIE Papers

Publisher:

MCC Center for International Economy

Address:

1113 Budapest, Tas vezér utca 3-7.

<https://cie.mcc.hu>

Editor:

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Budapest 2025.

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ISSN 3004-2607

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Abstract

The study belongs to a series of papers on the energy policy of Central Asia at CIE MCC, see the first part of the analysis [here](#). The objective of this series is to examine critical issues of regional energy security and energy diplomacy in Central Asia. This analysis offers insights into the challenges and opportunities that Central Asian countries face in securing stable and reliable energy supplies, managing energy infrastructure constraints, and navigating complex geopolitical dynamics. The aim of this study is to provide a comprehensive picture of how regional actors work together and externally to enhance energy security in Central Asia. The study examines the interplay between regional energy security and energy diplomacy in Central Asia, focusing on the strategies implemented by Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, and Tajikistan to balance domestic energy needs and international energy export flows.

Keywords: Central Asia, energy policy, energy security

Introduction

As Central Asian countries seek to leverage their energy wealth to promote economic development and increase their geopolitical influence, they face a great number of interconnected issues that require strategic and diplomatic solutions. These issues include addressing infrastructure gaps and diversifying energy supply routes, managing competing interests, and leveraging partnerships with external actors. The quest for energy security in Central Asia is as complex as it is important.

The objective of this section is to give an overview of contemporary energy challenges in Central Asia and describe the regional energy security landscape by offering insights into the evolving strategies, challenges, and opportunities that are shaping the regional energy landscape.

The energy balance of Central Asian countries

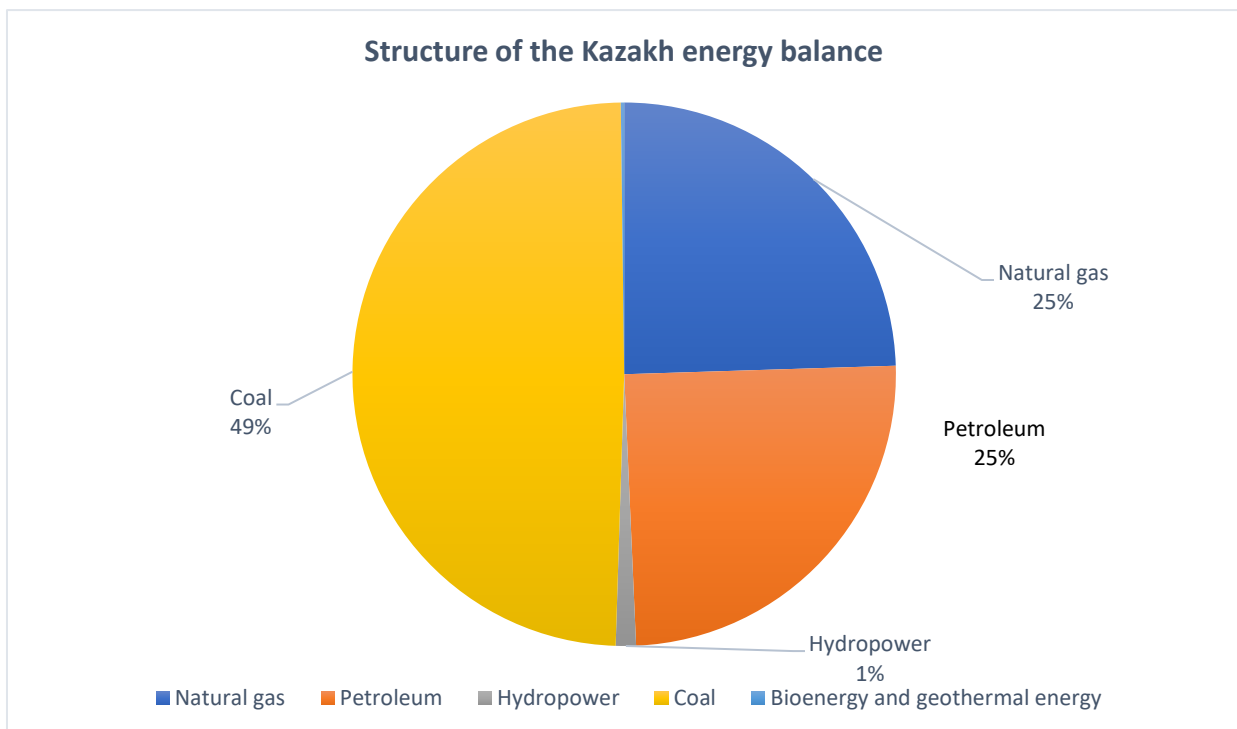
Kazakhstan

Central Asia has [significant](#) reserves of natural gas, oil and other natural resources. Among the countries in the region, Kazakhstan has been particularly successful in the extraction and processing of hydrocarbons, with oil production reaching 2 million barrels per day in 2020. Nevertheless, Kazakhstan's oil refining capacity was insufficient in the 1990s and 2000s. As a result, the country had to import nearly 30 percent of its oil products from neighboring countries during this period. Recognizing the vulnerability of the country's economy due to its

dependence on external supplies of oil products, Kazakhstan launched its own economic development program in 2009, aimed at modernizing oil and gas production.

Thanks to the modernization of the refineries in Atyrau, Pavlodar and Simkent in 2018, Kazakhstan has started to produce sufficient quantities of oil products to meet domestic needs and now has the largest oil refining capacity in [Central Asia](#). Kazakhstan is now a net [exporter](#) of products to Europe and Central Asia. Similar growth is observed in neighboring Uzbekistan and Turkmenistan, indicating that the region has successfully increased access to fuel for both industry and consumers.

Turkmenistan and Uzbekistan have remained fairly dependent on natural gas for energy production and income after independence, while Kazakhstan is still heavily dependent on coal and oil. Tajikistan and Kyrgyzstan have relied on hydropower to meet their energy needs, relying on coal and oil. Renewable energy sources such as solar, wind or geothermal energy and biofuels have played only a minimal role in the region. Over-reliance on a single energy source in Central Asian countries has been a huge risk for both the economy and the energy industry.



Source: own collection based on International Energy Agency

Uzbekistan

With more than 36 million inhabitants, Uzbekistan is the most [populous](#) country in Central Asia. Partly because of this and other policy considerations, Uzbekistan's approach to energy security is very different from that of other states in the region. For a long time after gaining independence, Uzbekistan had a tightly controlled economy that relied heavily on natural gas for its energy policy. However, in recent years, under the leadership of President Shavkat

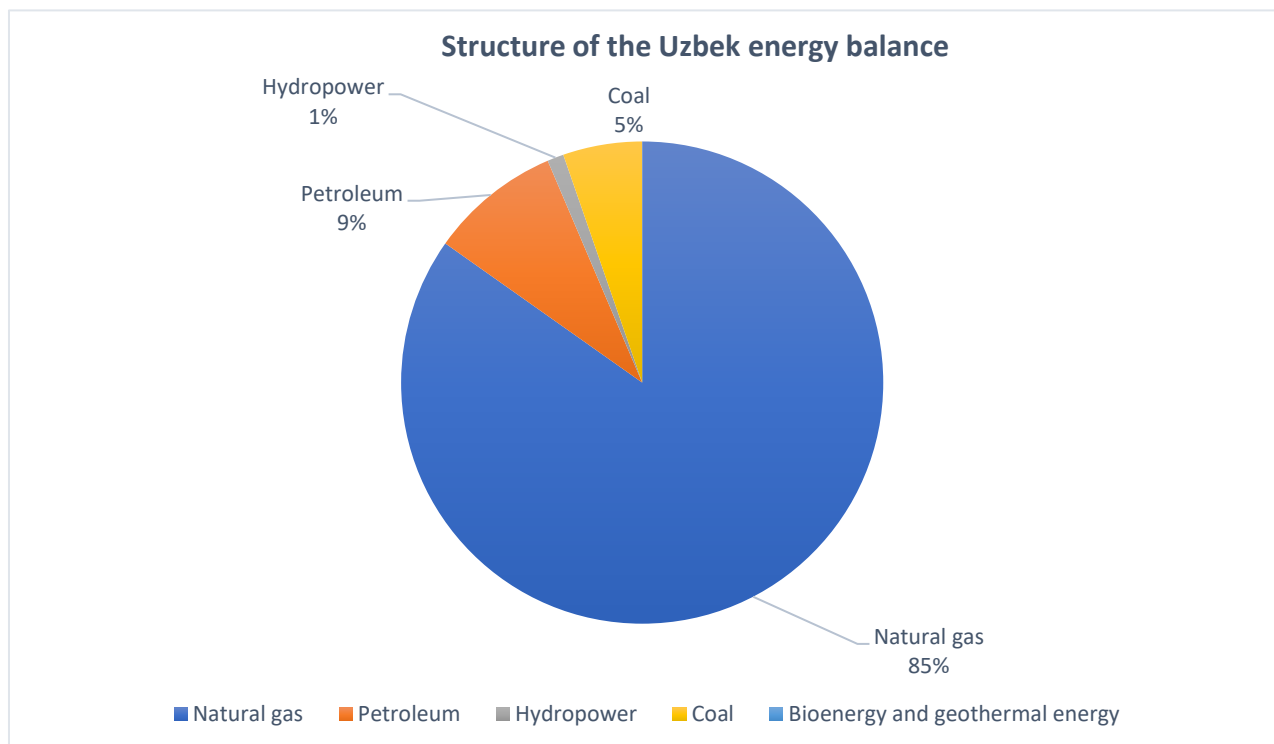
Mirziyoyev, Uzbekistan has embarked on rapid and far-reaching economic reforms. This reform program aims at restructuring the Uzbek energy sector, with a strong emphasis on renewable electricity generation. As part of this, the first draft law on renewable energy (Law No. 539 of 21 May 2019 on the use of renewable energy sources) entered into force in Uzbekistan back in May 2019. The legislation supports investment in renewable energy production by providing tax, tariff and other benefits to renewable energy producers and equipment used in the renewable energy sector. Other legal and regulatory reforms in the sector include the regulation of the connection of private electricity producers to the national electricity grid.¹

On energy security, in October 2019 Uzbekistan also published a draft of its strategy for the transition to a green economy by 2030. This strategy aims to meet the country's commitments under the Paris Climate Agreement. It plans to build renewable energy installations with a capacity of nearly 10 GWh by 2030.² [Recent](#) announcements suggest that wind and solar targets will be further increased to 7 and 5 GWh respectively.

Uzbekistan also has some hydroelectric power plants, the construction of which was financed by the European Bank for Reconstruction and Development. Other new hydropower projects have recently been announced, financed by Chinese banks, the Uzbekistan Reconstruction and Development Fund and the Russian Export-Import Bank (Rosexim Bank). In addition, Uzbekistan is developing wind power generation facilities and pursuing an ambitious nuclear energy strategy.

¹ Two other recent pieces of legislation are the Public-Private Partnership Act (Act ZRU-537 of 10 May 2019) and the Investment Activities Act (Act ZRU-598 of 25 December 2019). These laws have a broader scope in the Uzbek economy, but provide a regulatory framework and government support for the implementation of renewable energy projects.

² 5 GWh of solar panels, 3 GWh of wind power and 1.9 GWh of hydroelectric power.



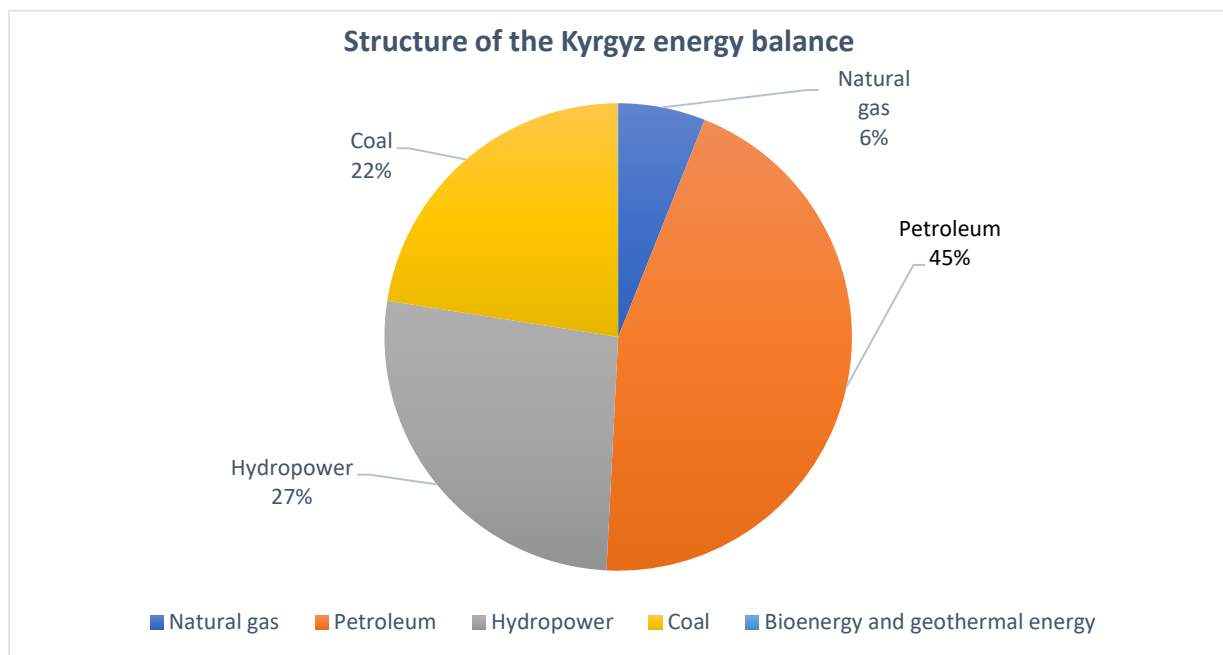
Source: own edits based on International Energy Agency

Kyrgyzstan

Kyrgyzstan uses its geography to produce most of its electricity. It is a much smaller country in terms of population than Uzbekistan and therefore has a different energy policy. According to the International Hydropower Association, both countries generated more than 90 percent of their annual electricity [capacity](#) from hydropower in 2017.

In Kyrgyzstan, about 90 percent of total electricity generation is hydro-based. The Central Asian country has one of the highest renewable electricity shares in the [world](#). It is estimated that the Toktogul reservoir and the Narin River have the potential to provide 140-170 TWh of hydropower, of which only 10 percent has been exploited so far.

However, Kyrgyzstan failed to expand its [hydropower capacity](#) between 2010 and 2018. During this time, its domestic electricity demand increased by almost 45 percent, raising significant energy security policy issues for the country's leadership. In addition, the country is also subject to [significant](#) annual droughts, which have caused the water level in the Toktogul reservoir to drop in recent years. In order to maintain the country's energy security, the Kyrgyz government has established the National Energy Holding Company and the State Commission for Industry, Energy and Subsoil Use, which are responsible for establishing and overseeing the development of a unified state energy policy and implementing the practical use of renewable energy [sources](#).

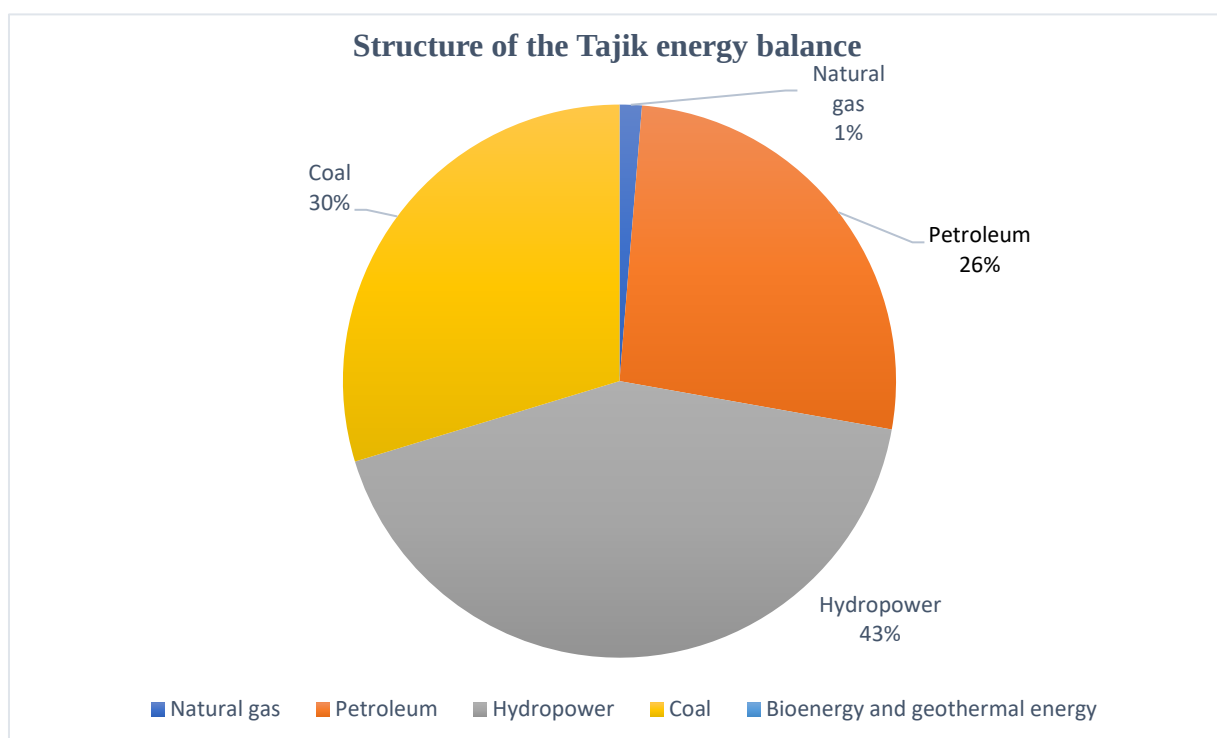


Source: own collection based on International Energy Agency

Tajikistan

Tajikistan is also a mountainous country with significant potential for electricity generation from hydropower sources. Mountains cover 93 percent of its terrain. Around 98 percent of the country's electricity is generated by hydroelectric [power plants](#). However, the water flow of the rivers that feed Tajikistan's hydroelectric power plants is fed by glacier melt and snowmelt, which is severely affected by climate change. The water yield of the country's rivers and the rate of glacier melting have a major impact on Tajikistan's energy policy. A related challenge for the country's energy security is how to diversify its energy sources, as Tajikistan's energy [supply](#) is 70 percent supplied by a single facility, the Nurek hydropower plant.

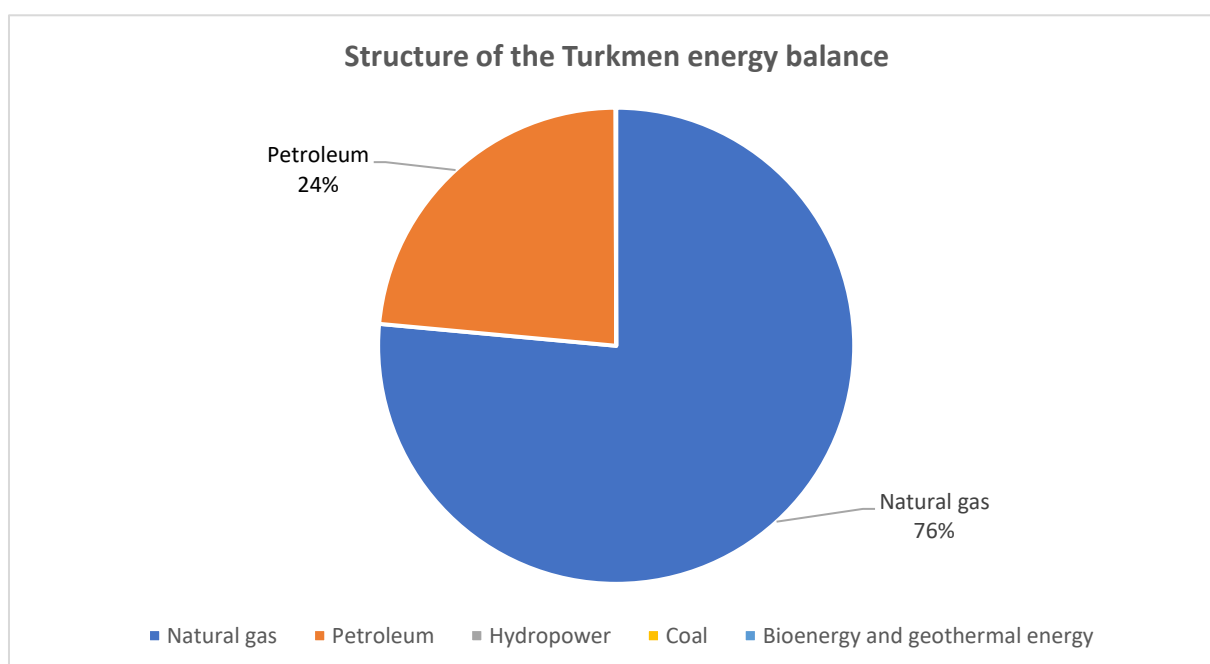
In Tajikistan, the Sustainable Energy for All Fund was established in 2013 as part of a review of the current situation of the country's energy sectors. Following this [analysis](#), the fund set a target of increasing energy production from renewable sources to 20 percent.



Source: own collection based on International Energy Agency

Turkmenistan

In Turkmenistan, natural gas is seen as a transitional fuel that can offer a temporary alternative to more polluting coal and oil. Although the country has been slower than its Central Asian neighbors in introducing policies and regulatory reforms to support renewable energy development, Turkmenistan's National Strategy for Renewable Energy Development for the [period](#) up to 2030 was approved by Presidential Decree on 4 December 2020.



Source: own collection based on International Energy Agency

Support of multilateral financial institutions

The support of multilateral financial institutions is key to achieving energy security in Central Asia. Multilateral financial institutions play a pivotal role in promoting energy security in Central Asia for several reasons. Primarily, these institutions offer financing and investment opportunities that facilitate the development of energy infrastructure projects in the region. Additionally, they provide technical assistance to Central Asian countries, aiming to enhance their energy policies, regulations, and governance frameworks. This support can contribute to enhancing the efficiency and sustainability of the energy sector, which, in turn, can lead to an increase in energy security. For example, in 2019, Uzbekistan became the first country outside Africa to join the World Bank's Scaling Solar [program](#). In addition, the World Bank is working with the Uzbek government on various investment strategies to stabilize energy security. In addition, the country is also drawing on the support of international financial institutions such as the Asian Development Bank to build its energy security.

Kazakhstan's energy policy receives significant [support](#) from the European Bank for Reconstruction and Development (EBRD) through the EBRD Kazakhstan Renewables Framework. In addition, the Kazakhstan Renewable Energy Framework and the Green Climate Fund are the largest climate and energy security policy funds in the world.

Other international financial institution support to the region includes the World Bank's Partnership Framework for Tajikistan and Asian Development Bank (ADB) support for the modernization of hydropower facilities in Kyrgyzstan

Non-regional actors of energy security in Central Asia

The break-up of the Soviet Union opened up new opportunities for many of Central Asia's neighbors and other major powers to establish a presence in the region. As a result, China's policy towards the Central Asian countries has been geared towards the gradual assertion of interests and has sought to strengthen its position in post-Soviet Central Asia.

Both the European Union and the United States have shown great interest in the Central Asia's post-Soviet countries. In 2005, the United States attempted to strengthen its Central Asia policy by proposing the concept of a "[Greater Central Asia](#)". This project would have envisaged the unification of not only the countries of Central Asia, but also Afghanistan, India and Pakistan into a single geopolitical entity. However, as it turned out later, the United States saw the countries of Central Asia as a potential energy reserve for the world. With the exception of various energy projects, US interests were not clearly articulated. As a result, by the late 2010s, US interests in Central Asia were limited to developing diplomatic relations.

European countries were rather late in developing their strategies for Central Asia. The EU approved its cooperation strategy with Central Asia as late as June 2007. Since then, an important element of European cooperation with Central Asian countries has been limited to the exploitation of energy resources.

After the break-up of the Soviet Union, Russia's policy towards Central Asia went through several phases, each reflecting the views of the Russian political leadership, while Russia's bilateral relations with Central Asia remained the dominant form of forging relations with these countries.³ In the energy sector, one of the major achievements of Russia's Central Asian [policy](#) was the implementation of the Caspian Pipeline Consortium, which was used to transport Kazakh oil to the port of Novorossiysk.

In lieu of a conclusion

During the years of independence, the countries of Central Asia developed alternative trading routes to export their hydrocarbon products. New pipelines were built, giving Kazakhstan, Uzbekistan and Turkmenistan unhindered access to foreign markets. However, their efforts have not reduced dependence on external consumers. The countries of the region see each other not only as partners but also as competitors. This encourages the Central Asian countries to promote alternative projects that reduce their dependence providing new advantages in oil and gas supply. Like in many developing economies, the construction of renewable electricity generation facilities is only one part of the energy security policy of the Central Asian countries. In order to promote an attractive investment environment and create the necessary framework for investment in renewable energy projects, Central Asia is undergoing significant structural and regulatory reforms in the energy sector and other areas of the economies. Energy security has also become a key factor in determining the foreign policy of the countries in the region.

The issue of energy security has many influencing factors (political and economic factors, strategic aspects, technological background, war conflicts). Today, energy security is most often considered from three different perspectives:

1. The first aspect is the issue of sovereignty. This approach is based primarily on the theoretical foundations of security studies, international relations and political science. The sovereignty perspective identifies the main threats to energy security as hostile states, untrustworthy exporters, energy companies with excessive influence, but considers embargoes and the challenging of energy supply systems (see the Russia-Ukraine war) as the greatest threats.
2. The second aspect of the energy security issue is the proper management of global constraints. At the heart of this aspect are quantifiable geographical and economic factors such as demand growth, resource scarcity, geographical location and natural phenomena.
3. The third perspective on energy security focuses on the day-to-day challenges, the efficient and long-term functioning of energy markets, and the interdependencies between technology and the complexity of the economy. According to this approach, energy security depends on a myriad of uncertainties – unforeseen economic crises,

³ The exception is multilateral relations. For example, the Eurasian Economic Union and the Shanghai Cooperation Organisation.

pandemics, unpredictable political regimes, wars – and the most important thing is to prepare for them, as they are the greatest uncertainties for energy security today.

Under this perspective, and with the outbreak of the Ukrainian- Russian war, the energy security of Central Asia, which is Russia's neighbor, is also in question. According to the International Monetary Fund, Western sanctions against Russia in 2022 have significantly restrained economic growth in the Central Asian region (and the 11th package of sanctions against Russia, prepared by the European Union, is expected to have a strong impact on Central Asian economies).

Due to close trade and financial ties with Russia, remittances from Russia and declining numbers of Russian tourists, economic growth in the Caucasus and Central Asia is forecast to slow from 5.6 percent in 2021 to 2.6 percent in 2022, with inflation in Central Asia projected to be around 10.7 percent due to currency depreciation pressures and rising commodity prices.

The impact of Western sanctions against Russia on other Central Asian countries is that they have prevented European goods from reaching Central Asia through Russia, and as a result, Central Asian countries have reduced access to Western export markets. Although the United States has exempted the Caspian Sea pipeline consortium – in which Chevron has a 15 percent stake – from sanctions, Central Asian countries rich in oil and hydrocarbons find it difficult to sell their oil and gas exports through Russia. Several European countries, such as Italy and Austria try to maintain their relations with Central Asia through bilateral agreements. Sanctions against Russia and Western economies' stopping buying gas from Moscow have an immediate impact on the Turkmen economy, as Ashkhabad's gas supplies to Europe go through Moscow.⁴

Since the war began in February 2022, the Kazakh currency has lost 20 percent of its value against the dollar. Similarly, the Tajik Somoni has fallen by nearly 35 percent against the ruble. And the depreciation of domestic currencies has forced some national banks in Central Asia to raise their benchmark interest rates and allocate funds from their foreign exchange reserves to maintain domestic market and price stability.

Economies in Central Asia – Tajikistan and Kyrgyzstan in particular – depend heavily on remittances from workers in Russia. Even during the severe Covid-19 pandemic, more than 2.5 million workers from Central Asia were working in Russia. The remittances of migrant workers contribute 26.7 percent and 31.3 percent to the GDP of Tajikistan and Kyrgyzstan respectively, which will in all likelihood decrease significantly in the future.

Since March 10, 2022, Russia has banned grain and white sugar exports to the Eurasian Economic Union, raising food security concerns in Central Asian countries. For example, in 2021 Kazakhstan imported 2.3 million tons of grain, 77 percent of which it bought from Russia. After the Russian embargo, the Kazakh authorities decided to suspend wheat exports.

The ongoing war in Ukraine may increase tensions in the poorest countries of Central Asia, especially Tajikistan and Kyrgyzstan among unemployed young people of the region, and the

⁴ Russia has renewed gas purchases from Turkmenistan after 2019.

weakening economic situation will only intensify the ever-present civil unrest and ethnic clashes, which could even lead to instability at regional level, as has been the case on several occasions in the past.

Russia was previously seen as a source of stability, security and territorial integrity in Central Asia, but Russian aggression in Ukraine has raised questions. Turkmenistan and Uzbekistan remained absent from the March 2022 UN General Assembly Special Session on the conflict, while Kyrgyzstan, Kazakhstan and Tajikistan abstained.

As a guarantor of security in the region, Russia has sent military equipment to the Tajik-Afghan border and has held several joint military exercises with Tajikistan and Uzbekistan, but now, because of security dilemmas and economic implications, Central Asian countries – especially those that share a 2,387-kilometre border with Afghanistan – are looking to China and India to possibly take over Russia's role in maintaining security in the region. In addition, several Russian and Central Asian experts expect that the United States could create a so-called "second front" against Russia in Central Asia, which could lead to economic sanctions against the countries of the region.