

China's Global Energy Strategy: A Case Study on its Power Dynamics with Central Asian States"

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Abstract

This paper explores China's evolving global energy strategy through a focused case study of its power dynamics with Central Asian states. Considered to be the world's largest energy consumer and importer, China's growing dependence on foreign energy sources, especially fossil fuels have heightened concerns over energy security and geopolitical vulnerability. In response, China has strategically turned to Central Asia, a region rich in oil and gas, to diversify its energy supply and reduce reliance on politically unstable or maritime routes. Through initiatives like the Belt and Road Initiative and major infrastructure projects such as the Central Asia-China Gas Pipeline, China has established robust energy partnerships, enhancing both regional development and its own geopolitical influence. However, these engagements also present risks, including environmental concerns, debt dependency, and geopolitical competition, particularly with Russia and Western powers. This paper examines the dual dimensions of opportunity and risk inherent in China's Central Asian energy diplomacy. It offers comprehensive policy recommendations, including the establishment of multilateral cooperation frameworks, investment in sustainable and transparent infrastructure, strengthening of bilateral agreements. The study concludes that a balanced, cooperative, and sustainability-oriented approach is essential for securing long-term mutual benefits and regional stability in the context of China's global energy ambitions.

Key Words: Energy Diplomacy, China's Global Energy Strategy, Central Asia, Geopolitics, Strategic Partnerships, Belt and Road Initiative (BRI), Energy Infrastructure.

Introduction

China is the world's largest importer and consumer of energy, driven by rapid economic growth and increasing demand. Although it is a major power producer, China still imports significant amounts of fossil fuels, including oil, coal, and natural gas. According to the International Energy Agency (IEA), China is expected to become the world's top oil consumer by the 2030s. (IEA, January 2024) Its substantial energy imports have a significant impact on the global economy, but this reliance on foreign energy also raises concerns about energy security. For instance,

much of China's oil comes from politically unstable regions like the Middle East and Africa. To enhance energy security, China is actively promoting domestic energy production, including both conventional and renewable sources. In an effort to reduce dependence on fossil fuels and address environmental challenges, the country has expanded its use of renewable energy, such as hydropower, wind, and solar energy. (White, 2023) China's interests in Central Asian states are primarily driven by its need to secure diverse and reliable energy resources to fuel its growing economy and support its shift from coal to cleaner energy like natural gas. Central Asia, rich in oil and gas resources, offers China a strategic alternative to traditional suppliers in the Middle East and Africa, helping reduce its reliance on maritime routes like the Malacca Strait, which are vulnerable to geopolitical risks. Through significant investments in energy infrastructure, such as the Central Asia-China Gas Pipeline and the Kazakhstan-China Oil Pipeline, China has established long-term energy partnerships that ensure stable supplies while enhancing its geopolitical influence in a region historically dominated by Russia. Additionally, China's Belt and Road Initiative (BRI) further integrates Central Asian energy resources into global markets, boosting regional development and positioning China as a key economic partner. (Jun Wen, 2020) This energy diplomacy not only secures China's energy needs but also promotes regional stability, aligning with China's broader strategic goals of expanding its influence and securing its western borders, particularly in relation to the restive Xinjiang region. Domestically and internationally, China is advancing a new economic model that emphasizes massive investments in local infrastructure to boost development and connectivity. This vision culminated in the Belt and Road Initiative (BRI), launched in 2013 by President Xi Jinping in Kazakhstan as the "Silk Road Economic Belt." The BRI aims to revitalize ancient trade routes, connecting China to Europe by modernizing transport corridors and investing billions of dollars into infrastructure projects across countries between China and Europe. Central Asia, strategically positioned between supply sources and final markets, has thus gained critical importance for Chinese ambitions.

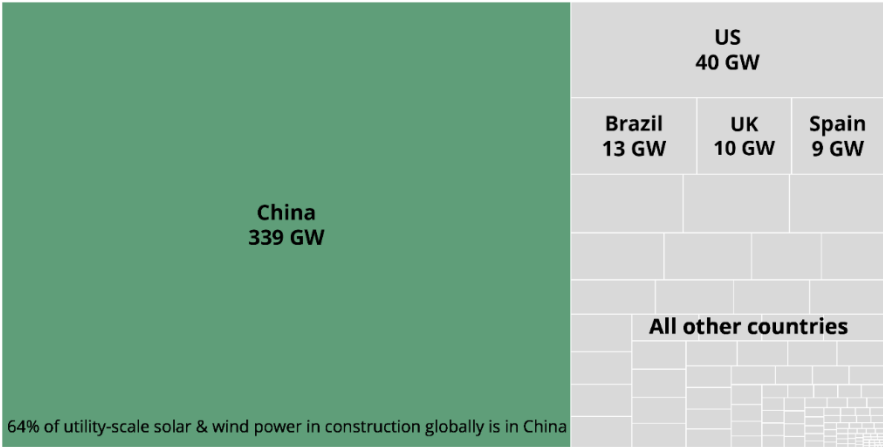
Since the 1990s, China's growing economic strength enabled it to implement its "Going Out" strategy, significantly increasing its influence in Central Asia, often outpacing Russia, except in Kazakhstan. Turkmenistan exemplifies China's success in the region, where China accounts for 44% of the country's trade compared to Russia's 7%. Overall, Chinese trade with Central Asia skyrocketed from less than \$1 billion annually in the 1990s to over \$30 billion by 2017. China views regional economic development as crucial for political stability, which aligns with its broader strategic objectives.

China's steps for renewable Energy Technologies

China currently leads the world in renewable energy technologies. As China is cementing its position as a global leader in renewable energy with 180 GW of utility scale solar and 159 GW of wind power under construction. That's 339 GW total, almost double the rest of the world combined enough to power all of South Korea according to new data from Global Energy Monitor (GEM). These projects are a third of all proposed wind and solar in China, far more than the global average of 7% as per GEM's latest Global Solar Power Tracker and Global Wind Power Tracker updates.

China is home to almost two-third of world's utility-scale solar and wind power in construction

Below Figure 1 showing Utility scale and wind power capacity in construction, by country. (Aiqun Yu, 2024)



Note: Data includes solar project phases with capacity of 20 megawatts (MW) or more and wind project phases with a capacity of 10 MW or more. Capacity under construction for China and Europe updated in June 2024, while other regions accurate to December 2023.

Source: Global Solar Power Tracker, Global Wind Power Tracker, Global Energy Monitor



According to the National Energy Administration, China's renewable energy capacity will reach 1,063 GW in 2021, accounting for 44.8% of total power generating capacity. Furthermore, China participates in energy diplomacy, promoting bilateral and international collaboration to meet its energy demands. (Xia, Ye, Jiang, & Shu, 2020) China can improve investment protection and manage transnational projects to foster multilateral cooperation with its Eurasian neighbors. On a bilateral level, China has formed alliances with energy exporting nations and made significant investments in their energy industries. Since the 1990s, Chinese state-owned oil firms (SOCs) have engaged in international oil projects, mostly in Africa and Central Asia. China participates in regional forums and fosters multilateral energy discourse.

In 2013, China established the Belt and Road Initiative (BRI) to enhance connectivity and cooperation among Eurasian nations in infrastructure, policy, commerce, finance, and culture. By March 2022, 147 nations throughout the world had joined the BRI, including 43 in Sub-Saharan Africa, 35 in the European Union, 25 in East Asia and the Pacific, 20 in Latin America and the Caribbean, 18 in the Middle East and North Africa, and 6 in Southeast Asia (Safa, 2017)

Examining China's Energy Diplomacy

Policy: Energy diplomacy was not a priority in the country's diplomatic efforts. With the Chinese economy booming and demand for imported energy constantly increasing, China's energy plan has prioritized considerably extending the routes for supplying imported energy. According to the recent international energy organization statistics, (IEA, Data and statistics, 2022) China's oil consumption surpassed Japan's for the first time in 2003, placing it only behind the United States as the world's second largest consumer. China's daily oil consumption has reached 5.46 million barrels (Japan's is 5.43 million barrels), accounting for 6.5% of global consumption, close behind the United States (25.5%).

Due to the strategic significance of oil, global oil production hubs have become central points of contention among various political forces. As nations strive to secure resources essential for survival and growth, competition for oil has intensified. This growing global demand places China under increasing pressure to secure oil resources, making oil security a more complex challenge in the future. To address this, the Chinese government is accelerating efforts to build a robust national oil security system. This strategy focuses on establishing national oil reserves and diversifying sources of imported oil to reduce reliance on specific regions or transport routes.

Actions: Energy diplomacy has emerged as a crucial pillar of China's overall diplomatic efforts, extending to high-level summits in recent years. Additionally, major Chinese energy enterprises are increasingly adopting diplomatic roles in their international activities. In line with the **11th Five-Year Plan for National Economic and Social Development (2006)**, China aims to expand international oil and gas cooperation based on equality and mutual benefit. This plan emphasizes active participation in global energy systems, leveraging international markets, and ensuring the nation's energy security. During the G8 Summit in St. Petersburg in July 2006, then-President Hu Jintao outlined China's energy strategy, emphasizing energy efficiency, domestic prioritization, environmental protection, and sustainable development. He called for mutually beneficial international cooperation to establish a stable, economical, and clean energy supply system, highlighting the importance of global collaboration to safeguard energy security.

The "11th Five-Year Plan" serves as a roadmap for addressing China's development challenges, restructuring its economy, ensuring sustainable growth, and reducing environmental impacts. Central to this vision is the concept of "good and fast" development, which focuses on balancing speed, quality, and returns while harmonizing economic growth with resource and environmental sustainability. This framework underpins China's energy diplomacy, linking it to the broader national development strategy. Energy diplomacy also plays a pivotal role in advancing China's "going-out" strategy, which promotes the internationalization of Chinese enterprises. By fostering global energy partnerships, the strategy aims to create favorable operating conditions for energy companies, enhance commodity exports, support engineering projects, and drive technological innovation through collaboration and joint research initiatives. In essence, China's energy diplomacy addresses complex challenges, such as ensuring a stable and adequate energy supply, securing transportation routes, and advancing energy technology. These efforts are integral to boosting energy efficiency and achieving environmental sustainability while reinforcing China's position in the global energy landscape. (QINHUA, 2007)

Low-Carbon Growth Catalyst

Investing in renewable energy capacity yields higher returns to scale. On the contrary, investment in fossil fuels yields diminishing rewards. These effects could mutually reinforce and strengthen one another. An emphasis on low-carbon transitions opens up new growth opportunities. Sustainable expansion does not necessitate expensive methods of operation; rather, it can save money in two ways. First, it contributes to the extension of the production possibility frontier (PPF) by generating and executing new ideas and innovations. Notably, advances in innovative, low-carbon technologies can improve a country's ability to produce more with the same resources. Second, it has the ability to improve efficiency, allowing for the production of a certain output level with less material resources. (Bednarski, 2021)

China's future development will be driven by innovation, requiring significant investment. This transition will boost China's competitiveness and promote environmental sustainability. By providing a unique and focused path of action, the government's steadfast commitment has the ability to inspire innovation and investment for long-term growth while also assisting in the efficient and equitable administration of the transition period. The investment returns will be solid, with economic, social, and environmental benefits. (Howe, 2023)

Shifts in China's Policy Priorities

China's traditional development policies are outmoded, making achieving high carbon growth unsustainable in the medium to long term. Previous periods of expansion were propelled by large expenditures in physical infrastructure, particularly in the manufacturing sector, high-carbon infrastructure, and fossil fuel-based energy sources. Amidst rising threats to natural, human, and social resources such as environmental pressures, social tensions, technological changes, and the challenges posed by an ageing population, it is critical to have a more comprehensive understanding of prosperity when pursuing new economic growth models. In the long run, this will be required to maintain the environment, human well-being, and social justice. The new growth model must be sustainable and differ from the previous strategy in at least three important ways. (Sharif, 2015)

The focus should shift from generating commodities for material wealth to understanding human wellbeing across multiple dimensions. Second, there should be a shift away from viewing production solely as the accumulation of human knowledge and the transformation of natural resources into physical assets, and towards prioritizing the preservation of natural and social resources while acknowledging their importance as inputs and outputs. This is accomplished by encouraging the adoption of circular production processes. Third, employ new technology to create eco-friendly products and services that adapt to changing consumer demands. (Jia, 2021)

China's Multilateral Approach in Energy Diplomacy

China's energy diplomacy focusses on securing energy resources and strengthening geopolitical power, primarily through the Belt and Road Initiative (BRI). China's investment of US\$ 140 billion in 18 countries as part of the Belt and Road Initiative (BRI) supports geostrategic goals and diversifies energy supply chains (see Table 2.2). This approach aligns with China's multilateral goals to increase global influence and secure energy security. (Wang, 2022).

Figure: *China's BRI investment in countries 2013-2023*

Country	China sponsored projects completed under the BRI between 2013 and 2023	Total Chinese investments between 2013 and 2023 (in US\$ billions)
Kyrgyzstan	8	4.73
Maldives	7	1.52
Turkmenistan	2	7.67
Singapore	73	62.38
Georgia	13	2.55
Timor-Leste	2	0.78
Gabon	9	2.36
Democratic Republic of Congo	30	16.33
Benin	5	1.71
Zambia	34	11.44
Ethiopia	50	11.98
Palestine	N/A	N/A
Syria	N/A	N/A
Venezuela	9	6.52
Colombia	10	8.18
Uruguay	1	0.18
Nicaragua	1	0.5
The Solomon Islands	1	0.37
Total number of countries: 18	Total number of projects: 225	Total amount invested: US\$ 139.2 billion

Source: The Belt and Road Portal, the Third Belt and Road

Forum Archives, Chinese Foreign Ministry, China's State Council

Securing Energy Resources through Bilateral Agreements

China's energy diplomacy focusses on building strong bilateral partnerships with countries with significant energy resources and minerals to secure their acquisition. This category includes resources such as oil, crude oil, natural gas, and minerals crucial to the electronic vehicle manufacturing industry, also known as the 'electric eighteen'.

Central Asia: Strategic partnerships between China, Kyrgyzstan (Xi Jinping talks with President Sadyr Zhaparov, 2023), and Turkmenistan are crucial. (China, 2023) The memoranda inked with Central Asian Republics prioritise increasing natural gas exports to China and establishing the KUC Railway. Turkmenistan's natural gas exports to China have grown at a constant yearly pace of 18.4 percent this decade. Turkmenistan's natural gas shipments to China make about 98% of its overall exports. This partnership ensures a continuous supply of natural gas and strengthens China's energy resiliency. The KUC Railway project enhances China's connectivity with Eurasia, providing access to Central Asian and European markets and creating a new Eurasian corridor within the Silk Road Economic Belt. (Sharif H. C., 2015)

Africa: China's bilateral relations with Gabon and the Democratic Republic of Congo (DRC) in Africa mostly focus on guaranteeing a consistent supply of natural resources. China relies on Gabon for 61% of its oil export, whereas Gabon supplies 22% of China's manganese imports. China has expanded its military and industrial presence in the Democratic Republic of the Congo in order to maintain regional security and protect mining rights, particularly for copper. These strategic

agreements provide a steady supply of minerals and energy resources critical to China's industrial and technological sectors. (Nyabiage, 2024)

China's policy to Benin, Zambia, and Ethiopia prioritizes energy access and infrastructure development for neighboring nations with significant natural resources but limited maritime access. Benin's closeness to Niger, where the China National Petroleum Company owns 66 percent of its largest oilfield, has resulted in more collaboration agreements under the BRI. Furthermore, Zambia and Ethiopia, because to their advantageous geographic locations, play an important role as strategic partners in China's energy diplomacy. (Liu, 2022)

ASEAN Region: ASEAN is China's biggest trading partner so stronger cooperation between China and ASEAN is crucial for an equitable energy transition. The Regional Comprehensive Economic Partnership (RCEP) launched by ASEAN is the world's largest free trade agreement which aims to establish a single market for intermediate goods through tariff cuts. This can boost the trade of renewable energy in Asia. By having more coordination and communication member states can reduce trade disputes and work towards common policy goals. Meanwhile China can strengthen its competitive advantage in renewable energy products by expanding its investment and manufacturing supply chains in ASEAN and accelerate the region's energy transition. (Lei Bian, 2024) China's Belt and Road Initiative (BRI) expansion of overseas investment can contribute significantly to the development of renewable energy technology supply chains in ASEAN countries. However, financing of renewable energy projects is hindered by lack of policy and financial support from domestic banks and government institutions and grid infrastructure challenges. By incorporating sustainability in its export finance and trade related financial mechanisms China can encourage its domestic renewable energy companies to scale up their investment in ASEAN. The Just Energy Transition Partnerships (JETPs) in Indonesia and Vietnam can influence the BRI's role in ASEAN's energy transition. China and G7 cooperation can accelerate things in the region. China can also consider joining the Coalition of Trade Ministers for Climate and ask ASEAN to do the same. This will show China's recognition of trade policy's role in driving a zero emissions, climate resilient economy and address concerns over its dominance in critical markets such as electric vehicles and renewable energy technologies. (Nedopil, 2023)

Multilateralism and Strategic Partnerships

China participates in international organizations such as the United Nations Framework convention on climate change (UNFCCC), BRICS, and group of G20, demonstrating its commitment to multilateralism. China uses these multilateral forums to influence global energy policies and promote its vision of sustainable development. China's participation in these platforms aims to strengthen energy security and achieve geopolitical goals by fostering global collaboration. (Misiągiewicz, 2023)

Energy Multilateralism: China engages in global energy programs, including the International Energy Agency (IEA) and the International Renewable Energy Agency (IRENA). These platforms allow China's collaboration with other countries on energy security, technology transfer, and sustainable development. China's participation in IRENA enables the sharing of renewable energy technologies and best practices, which helps to accomplish its domestic green energy goals and maintain its global position as a pioneer in renewable energy. (China., 2023)

Regional Cooperation: China's energy diplomacy is facilitated via regional multilateral fora, such the Shanghai Cooperation Organization (SCO) and the Asian Infrastructure Investment Bank. The SCO allows China to actively work with Central Asian countries on energy issues while prioritizing security and economic cooperation. The AIIB, which focusses on infrastructure development, funds energy projects that enhance regional connectivity and integration. (Howe, 2023)

Geo-economic Considerations:

The BRI's energy sector has typically taken an 'energy for-development' approach in Africa, Asia, and South America. Implementing this model, which relates investment and debt repayments to energy output, has frequently proven unproductive in achieving developmental goals in these areas. As a result, recent partnership enhancements are meant to ensure the ongoing export of energy resources while also strengthening China's energy supply chains. (Joe, 2023) China's rising collaborations indicate a purposeful shift in approach towards developing countries. This move aims to enhance China's energy security and economic stability by securing resources and strengthening supply lines. China's participation in multilateral and regional cooperation platforms supports its energy diplomacy and geopolitical ambitions. These strategic relationships balance the strength of the United States, particularly in Latin America and the South Pacific. (Chen, 2020)

Central Asia's Economic Opportunities for China

Central Asia has been geopolitically relevant in the past because of its geography or what Halford Mackinder called "the heartland". Russia has historically ruled over this region, and during the period of the Cold War it turned out to be a point of conflict, as the west mostly the USA came up with strategies to weaken Russia even more especially after the Soviet Union broke apart. At first, the United States engaged with Russia rather than with Central Asia directly, giving more attention to the changes in Russia than other republics that had abandoned communism. It was only after the attacks of September 11 that Central Asia became important in US anti-terror missions including deploying forces into the bases in the area. The Color Revolutions that were seen as manifestations of American soft power whose efforts changed the geopolitical orientations of the region further eroded the hold of Russia over the region. Before the 1990s, China could not do much regarding Central Asia, thanks to its limited sources of power. After the U.S.S.R collapsed, Beijing attended to territorial conflicts with Central Asian states which were threatening stability within Xinjiang and building political ties through the Shanghai Five and later the SCO. In the beginning, energy security was not the primary factor for China's engagement though energy cooperation eventually played a significant role in deepening political connections. Over time, China became increasingly involved in the geopolitical dynamics of the region, partly due to growing energy interests and infrastructure projects like cross-border pipelines. (Xuanli, 2021)

China made its first oil investments in Kazakhstan country. In June 1997, China National Petroleum Corporation (CNPC) outbid several major international oil companies, including Texaco, Amoco, and Russia's Yuzhnmot, to secure the rights to develop the Uzen oil field in Kazakhstan, which had reserves of 205 million tons, for \$9.5 billion. This deal also included \$3.5 billion for constructing a 2,000-kilometer oil pipeline to China and a \$4.3 billion payment for a 60.3% stake in Kazakh oil company Aktobemunaigaz (AMG), which held reserves of 130 million tons. (Liao, 2021) Many viewed the high price paid by CNPC as economically unfeasible, especially with the collapse of oil prices following the 1998 Asian Financial Crisis and the discrepancy between the oil production capacity (7.6 million tons per year) and the pipeline's designed capacity (25 million tons per year). (Hedge, 2018) As a result, the projects were delayed for several years.

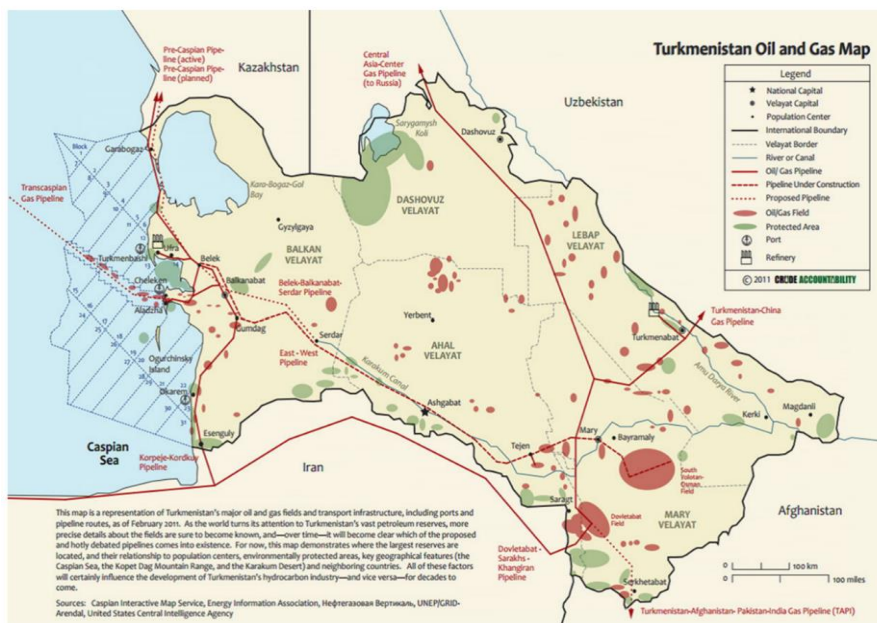
Kazakh-China oil pipeline

Construction of the 2,000 km Kazakh-China oil pipeline began in May 2002, and was completed in three phases over seven years, connecting Atyrau in Kazakhstan to Alashankou in China's Xinjiang province. The pipeline significantly increased Kazakhstan's oil exports to China, helping Kazakhstan reduce its dependence on Russia for energy exports. China National Petroleum Corporation (CNPC) also helped modernize Kazakhstan's Shymkent oil refinery, increasing refining capacity and improving fuel quality (LEA, 2022). The growing Sino-Kazakh energy cooperation encouraged Russia to expedite the construction of the Eastern Siberia-Pacific Ocean (ESPO) pipeline to maintain access to the Chinese market. The ESPO pipeline eventually became operational in 2011, with agreements expanding its capacity in subsequent years. The Kazakh-China pipeline strengthened China's energy security and CNPC's presence in Kazakhstan, while also drawing China further into Central Asia's geopolitical dynamics, complicating Russia's influence. (Vasilyev, 2015) Despite potential competition, the Shanghai Cooperation Organization (SCO) served as a mechanism to prevent rivalry between China and Russia.

Turkmen-China gas pipeline

Turkmen president Saparmurat Niyazov (1991-2006) began the Turkmen-China gas pipeline on his first visit to China in 1992. However, progress was slow due to high costs and deteriorating ties between Turkmenistan and Central Asian neighbours. In 2000, during President Jiang Zemin's visit to Turkmenistan, CNPC signed an agreement to conduct exploration and service work in the Kumdag oil field in western Turkmenistan. This was the first time a foreign company was granted onshore exploration rights in the country. Sinopec was also permitted to carry out drilling at the oldest Shatlyk gas field on the right bank of the Amu-Darya River. (Wilson, 2016)

Figure 3.5: Turkmenistan oil and gas Map



The Turkmen-China gas pipeline faced challenges due to political risks, uncertainties in Turkmenistan's production capacity, and price negotiations. The breakthrough came in 2006 when a general agreement was signed, committing China to purchase 30 bcm/year of gas for 30 years. Despite the unexpected passing of President Niyazov in 2006, new President Berdymukhamedov assured China of continued cooperation, leading to the pipeline's construction starting in 2007. Russia attempted to counter the pipeline project by offering higher prices and proposing an alternative route along the Caspian Sea. In response, China agreed to pay higher rates for gas, signaling its determination to secure energy supplies independently of Russia. The Central Asia-China Gas Pipeline (CAGP) began operations in December 2009, and two parallel lines became operational in 2010 and 2014, increasing Turkmen gas deliveries to China. (Xuanli, 2021)

Turkmenistan and Uzbekistan in China's Energy Policy

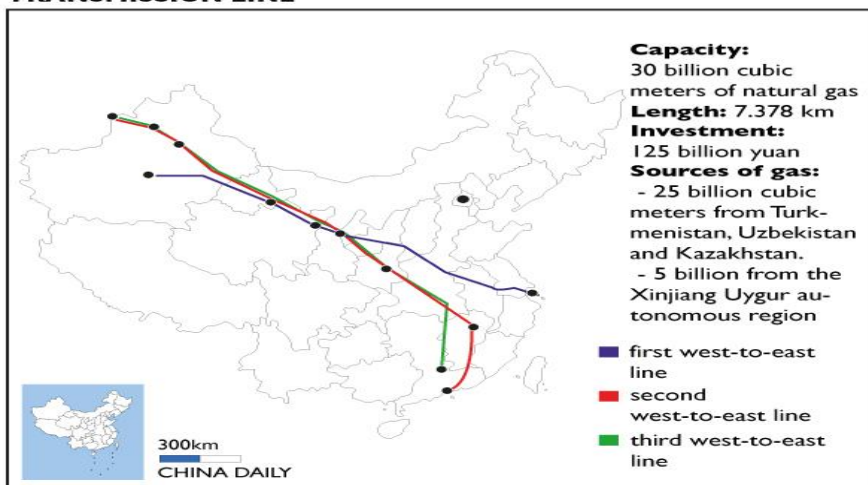
Turkmenistan, one of the world's largest natural gas exporters, had about 265 trillion cubic feet (Tcf) of proven reserves in 2012. This abundance attracted China's interest, and in 1992, diplomatic relations were established. The two nations initiated the Turkmenistan-China gas pipeline project, part of the Central Asia-China pipeline, which starts in Turkmenistan, passes through Uzbekistan and Kazakhstan, and then connects to China. In 2007, Turkmenistan agreed to supply 30 billion cubic meters (bcm) of gas annually to China for 30 years, starting in 2009. By late 2009, Turkmenistan's president announced plans to increase this to 65 bcm annually. Over the next 900 days, Turkmenistan supplied over 30 bcm of natural gas to China, covering a fifth of China's gas needs at the time. China's interest in Turkmen gas is strategic, helping it diversify energy sources and navigate regional geopolitics. (Cheang, 2019)

China's energy relations with Uzbekistan have also grown. Uzbekistan, with 65 Tcf of proven reserves as of 2012, ranks fourth in Eurasia. China has invested heavily in Uzbekistan's energy sector, including ventures with major companies like CNPC and CITIC. In 2004, CNPC signed energy cooperation contracts with Uzbekistan's Uzbekneftegaz, leading to joint exploration projects with other global companies. The Uzbekistan-China gas pipeline, part of the Central Asia-China pipeline, began gas deliveries in 2012, with additional lines boosting capacity to 25 bcm. China's investments in Uzbekistan exceed \$4 billion, making it Uzbekistan's largest investor and a key partner across multiple sectors. (Chen, 2013)

Figure 3.8: Map of China's West-to-West Natural Gas Transmission Line

Map 1b.

CHINA'S THIRD WEST-TO-EAST NATURAL GAS TRANSMISSION LINE



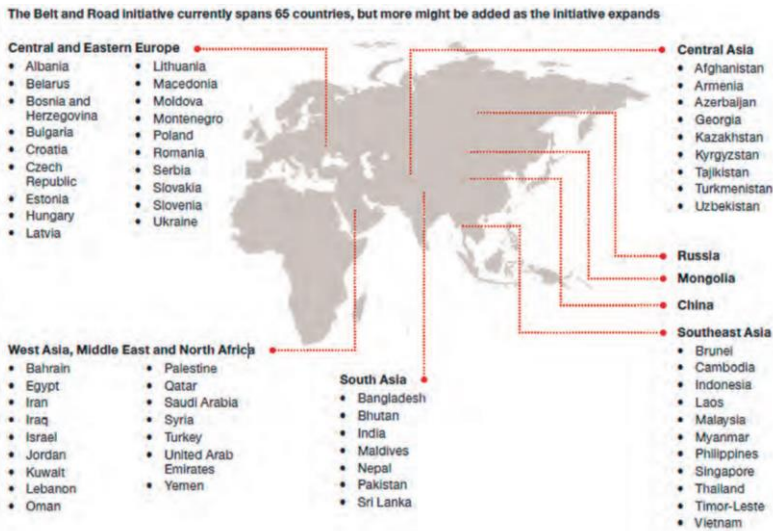
Sources: China National Petroleum Corp.

Source: <https://allchinareview.com/china-and-central-asia-a-significant-new-energy-nexus/>

Belt and Road Initiative (BRI)

Chinese officials describe the Belt and Road Initiative (BRI) as a project aimed at uniting 65 countries, encompassing a combined population of 4.4 billion, to collaboratively develop land and maritime "Silk Roads." The objective is to stimulate regional economic growth through integration and shared resources. This vision involves significant Chinese investment in select countries, regions, and industries, with the aim of creating an interconnected economic network. Over the anticipated timeline, total investments are estimated to range between \$4 and \$8 trillion. (Laruene, 2018)

Figure 3.9 the Belt and Road Initiative spans 65 Countries shown in the figure below



Source: PwC, "Repaving the Ancient Silk Routes,"
<https://www.pwc.com/gx/en/issues/high-growth-markets/publications/repaving-the-ancient-silk-routes.html>

Source: <https://www.pwc.com/gx/en/issues/high-growth/publications/repaving-the-silk-routes.html>

From China's perspective, the BRI reflects a broader ideological vision of building a "community of common destiny." Western observers, however, see the initiative as a continuation of China's "Going Global" strategy an effort to solidify its position as a global economic power and reshape the global economic order. (Tracker, 2019) The initiative mirrors strategies employed by other major economies, such as the United States, during earlier phases of globalization. China seeks to establish lasting economic ties with BRI partner nations, access new markets for advanced, high-value products, secure essential raw materials and energy supplies, and relocate some industrial sectors abroad. These investments bolster China's political influence and economic dominance in regions where it invests. In return, recipient countries commit to adopting technology, services, financing, and supplies provided by China, further enhancing the donor's economic leverage.

Despite these dynamics, recipient countries also gain from foreign investments through access to capital, knowledge transfer, job creation, and productivity growth, all of which contribute to economic development. With effective management, these nations can evolve into equal trade partners, benefiting from shared trade surpluses generated by leveraging their comparative advantages. This creates potential for mutual economic expansion and a win-win outcome. China has spearheaded the BRI by setting priorities, mobilizing financial resources, and coordinating the initiative through high-level diplomacy and institutions such as the Silk Road Fund and the Asian Infrastructure Investment Bank.

Post-Soviet Central Asia, comprising Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan, has a mutually beneficial relationship with China. Trade between the region and China grew significantly from \$1.7 billion in 2000 to nearly \$40 billion in 2019, driven by the region's role as an important energy and commodity hub in China's Belt and Road Initiative (BRI). As a result, China is the largest trading partner for four of the five countries, ranking second in Kazakhstan

behind Russia, and is also one of the largest investors in the region. For Central Asia, previously landlocked nations are now becoming more "land-linked" and interconnected. The World Bank estimates that by 2030, these countries will see a 1.1% increase in GDP, at least 1.24% growth in real income, 1.9% export growth, and a 7.3% rise in foreign direct investment flows due to BRI-related transportation improvements; additional changes to non-trade barriers would further enhance these benefits. (Bank, 2019)

Proposed by President Xi Jinping in 2013, the Belt and Road Initiative (BRI) primarily consists of the Silk Road Economic Belt, which connects China with Central and South Asia and extends to Europe, and the New Maritime Silk Road, which links China to Southeast Asia, the Gulf countries, North Africa, and further to Europe. (UMBACH, 2019) Due to its vast scope and objectives, the BRI has been described as China's Marshall Plan, aimed at realizing its Asia Dream and "reshaping the world." Some even view it as China's New Great Game in the Eurasian Heartland. In response to these perceptions, President Xi Jinping emphasized that the BRI is neither a foreign aid program like the Marshall Plan nor a geopolitical tool, but rather a platform for multilateral cooperation aimed at building the community of human destiny. (Xinhua, 2018) Regardless of how it is defined, the BRI represents the most ambitious foreign policy initiative in China's modern history, with an estimated \$1 trillion of investments in hundreds of infrastructure projects worldwide. To facilitate the implementation of the BRI, China established the state-run Silk Road Fund on December 29, 2014, with a total capital of \$40 billion and CNY 100 billion. (Walsh, 2020) The Fund's goal is to provide investment and financing support for trade and economic cooperation and connectivity under the BRI framework, with four shareholders: the State Administration of Foreign Exchange (65%), the China Investment Corporation (15%), the Export-Import Bank of China (15%), and the China Development Bank (5%) (Silk Road Fund). In January 2016, China also launched the Asian Infrastructure Investment Bank (AIIB) with the mission to improve social and economic outcomes in Asia. By the end of September 2019, the AIIB had 100 approved members and nearly \$100 billion in pledged capital, representing 78% of the world's population and 63% of global GDP. Given Beijing's 26.7% voting share, enough to block decisions requiring three-quarters approval, the AIIB is also seen as China's World Bank. So far, China has signed cooperation agreements with 126 countries and 29 international organizations to enhance infrastructure connectivity, such as ports, highways, railways, and pipelines, aiming to increase China's economic and foreign policy influence. By April 2019, the AIIB had approved 36 projects with a total investment of \$30.12 billion, including \$7.94 billion in AIIB loans. (Energy, 2019) Among these projects, Tajikistan has received two approved projects, focusing on the Nurek Hydropower Rehabilitation and the Dushanbe-Uzbekistan Border Road Improvement, while Uzbekistan has two pending projects for railway electrification (Bukhara-Urgench-Khiva) and the Bukhara Region Water Supply and Sewerage. On November 28, 2019, the AIIB signed a Memorandum of Understanding with Kazakhstan's Energy Ministry to improve the investment environment for renewable energy in Kazakhstan, with a project under consideration to build a 100 MW wind power plant in Zhanatas. (AIIB, 2018) Kazakhstan has been the most enthusiastic participant among Central Asian nations in supporting Beijing's BRI ambition, even describing itself as the buckle of the initiative and aligning it with its own development programs. (Xuanli, 2021) Here there is a list of projects between China and Central Asian states under BRI mentioned below.

Figure list of projects between China and Central Asian states under BRI

Sectors	Total number by sector	Kazakhstan	Kyrgyzstan	Tajikistan	Uzbekistan	Turkmenistan
Total by country	261	102	46	44	43	26
Trade and industrial development	131	61	17	17	24	12
Rail and road connectivity	51	14	11	16	5	5
Energy connectivity	48	20	5	7	12	4
People-to-people projects	31	7	13	4	2	5

Table 2. Breakdown of China's BRI and bilateral trade and industrial development projects

Sectors	Total number by sector	Kazakhstan	Uzbekistan	Tajikistan	Kyrgyzstan	Turkmenistan
Trade and industrial development	131	61	24	17	17	12
Mineral and petroleum exploration, extraction and processing projects	47	23	5	3	9	7
Industry	44	17	18	6	3	NA
Agriculture and food	26	17	1	6	2	1
Finance and IT	14	4	NA ³	2	3	4

Source: CADGAT Database retrieved from (<https://osce-academy.net/en/research/cadgat/>)2021

Central Asia in BRI Mapping

Geographically, Central Asia is vital for connecting China and East Asia with Europe. The region is also rich in oil, gas, and minerals, resources that are essential for China's growth. For instance, 21% of China's zinc and lead imports come from Central Asia. From a security perspective, Central Asia is important to China for maintaining stability in Xinjiang, which shares a long border with Kazakhstan, Tajikistan, and Kyrgyzstan. The ethnic ties between Central Asians and the Uyghurs in Xinjiang have led to criticism in Central Asia of China's policies towards the Uyghur minority, although most Central Asian governments label it as China's internal matter. (Umarov, 2020)

Politically, Central Asia is still unstable. Kazakhstan experienced significant unrest in early 2022, with violent protests centered in Almaty. Kazakh President Tokayev described the unrest as an attempted coup and sought help from the Russia-led Collective Security Treaty Organization (CSTO), which sent troops to stabilize the situation. This unrest concerned China, as Kazakhstan's stability is crucial for securing the Silk Road trade routes and protecting Chinese projects in the region. Following these events, President Xi expressed support for Kazakhstan, rejecting any external efforts to destabilize the country and threaten China-Kazakhstan cooperation. (China, 2021)

China, Russia, Kazakhstan, Kyrgyzstan, Uzbekistan, and Tajikistan are also members of the Shanghai Cooperation Organisation (SCO), which promotes political, economic, and security cooperation. Through the SCO, China and Russia conduct joint military exercises with Central Asian countries. While China has become the largest trade partner and investor for Central Asia, Russia still holds the dominant position in regional security and politics due to historical ties, which means China often responds rather than leads in regional crises, as seen in its approach to the Kazakhstan unrest. Despite Russia's influence, Central Asian countries look forward to the economic benefits of partnering with China. The BRI's infrastructure projects promise to improve trade and investment across the region. For example, the China-Europe Railway Express, a major overland BRI route

passing through Kazakhstan, has rapidly expanded in recent years, with freight shipments on this route reaching over one million containers by 2020. (Akita, 2019) While Central Asia has ample resources, its limited infrastructure has held back development. The region's landlocked geography and poor connectivity make it challenging to participate fully in regional and global trade. The BRI, however, is helping to address this, with China funding major infrastructure projects like highways, power plants, and airports to support Central Asia's economic growth and trade opportunities. (Cheney, 2019)

China's Investment in Central Asia's Mining and Energy Sectors

Following a pricing dispute between Turkmenistan and Gazprom in 2016, approximately 80% of Turkmenistan's gas exports were redirected to China. By the end of 2019, China had received over 250 billion cubic meters of Turkmen gas, valued at more than \$8 billion, with proceeds directed toward repaying Chinese loans. In early 2022, Turkmenistan became China's largest pipeline gas supplier from January to April, delivering \$2.9 billion worth of gas, while Kazakhstan's gas exports to China totaled \$270.6 million. (Djamalov, 2024)

In August 2021, China's state-owned CNPC began drilling new wells in Turkmenistan's gas fields in exchange for future gas supplies. Under this arrangement, Turkmenistan will supply CNPC with 17 billion cubic meters (600 billion cubic feet) of gas annually for three years, totaling 51 billion cubic meters (1.8 trillion cubic feet). (Akhundov, 2024) China is also Uzbekistan's primary market for gas exports. Although Uzbekistan temporarily suspended gas exports to China in 2022 due to domestic shortages, it soon resumed them. Tajikistan, meanwhile, has pledged gold mining rights to TBEA in Eastern Duoba and Upper Kumarg until it repays a \$331.5 million loan from China's Export-Import Bank for the Dushanbe-2 Power Plant. (Engvall, 2023)

Another major project in the region, the Central Asia-China pipeline, involves multiple lines connecting all five Central Asian countries to deliver Turkmen gas to western China. The construction of Line D, which traverses Tajikistan and Kyrgyzstan, has experienced repeated delays, likely limiting anticipated profits for these countries, as China is expected to take revenue from the project to offset construction costs. (house, 2022).

Risks and Implications for China Due to Its Engagement in Central Asian States

China's Belt and Road Initiative (BRI) and its involvement in Central Asia represent both transformative opportunities and complex challenges for the region. The BRI has strengthened connectivity, bolstered economic growth, and brought vital infrastructure improvements across Central Asia. China's proximity, economic clout, and interest in the region's energy resources make it a critical partner, especially as Central Asia seeks development amid a shifting geopolitical landscape. However, the risks associated with this partnership environmental concerns from fossil fuel reliance, economic dependency on Chinese investment, and potential political influence highlight the need for Central Asia to approach China's role cautiously. The implicit conditionality tied to Chinese aid and the region's increasing reliance on Chinese technologies and financial aid could lead to over-dependence, potentially compromising Central Asian sovereignty. For a sustainable future, Central Asian nations must diversify their partnerships, improve local governance, and enhance regulatory standards to balance China's influence. By fostering transparency and engaging with other global partners, Central Asia can leverage China's support effectively while preserving its autonomy and fostering regional stability. This nuanced approach will help Central Asia navigate its path toward

sustainable development, maximizing the benefits of Chinese collaboration while safeguarding its political and economic independence.

Recommendations

- China can work with Central Asian nations and other key global players, such as Russia, the European Union, and the United States, to create a structured and effective multilateral energy cooperation framework. This initiative can be realized through enhancing the Shanghai Cooperation Organization's (SCO) energy agenda, integrating it with the Belt and Road Initiative (BRI) for sustainable energy development. To address the region's geopolitical difficulties and rivalry, a structure like this should prioritize transparency, equal benefit sharing, and collaborative risk management. The SCO can serve as a strong framework for resolving regional difficulties by focusing on shared goals such as combating extremism, increasing border security, and boosting economic integration.
- China may prioritize sustainability and transparency in its energy and infrastructure investments across Central Asia. Given the region's vast natural resources, projects like the Central Asia-China Gas Pipeline and the Kazakhstan-China Oil Pipeline are pivotal. However, addressing environmental concerns, reducing debt risks for partner countries, and implementing sophisticated governance requirements are critical to maintaining long-term trust and collaboration. This policy would not only ensure China's energy supply, but will also foster economic stability and growth in Central Asian countries, thereby enhancing their position as key actors in China's global energy strategy.
- China should enhance its bilateral agreements with Central Asian states to secure long-term energy partnerships. This involves expanding direct infrastructure projects, such as pipelines and rail networks, bypassing dependency on Russian-controlled transit systems. Investment in high-efficiency, localized energy infrastructure will not only reduce reliance on external powers but also support the economic growth of Central Asian states, fostering goodwill and reinforcing China's role as a key partner in regional energy diplomacy.
- Central Asian countries, in partnership with China and other stakeholders like the Asian Infrastructure Investment Bank (AIIB) and European Investment Bank, can create a **Regional Green Energy Innovation Fund (RGEIF)**. This fund would: **Foster joint R&D projects** to develop region-specific clean energy technologies, leveraging China's leadership in solar, wind, and EV technology while incorporating local expertise. It can support **pilot projects** in underdeveloped regions to assess the feasibility of integrating renewable energy with existing grids. It can enable **local workforce training and education** programs to build expertise in green technology deployment and maintenance. (UNIDO, 2022) This initiative would ensure Central Asia's energy transition aligns with global trends, reducing environmental risks while building local capacity and ownership of energy solutions
- Central Asian nations may adopt a **Dual Dependency Reduction (DDR) Framework** to mitigate risks associated with over-reliance on both fossil fuels and Chinese investments. (Mueller, 2022) This framework would include: Establish regional energy reserves and inter-country energy-sharing agreements to balance supply disruptions and reduce dependence on single energy sources or partners. They can collaborate with China to establish joint manufacturing facilities for renewable energy components (e.g., solar panels, wind turbines) within Central Asia, fostering industrial independence while utilizing Chinese expertise. It can develop a monitoring system to measure progress in achieving energy sovereignty, focusing on the percentage of domestic energy produced

through renewable sources and investments secured from diverse international actors.

Conclusion

Energy diplomacy is at the heart of modern international relations, linking security, economic growth and sustainability. Central Asia, rich in resources and strategically located, is a case in point. Since the Soviet Union's collapse, the region has become a battleground for China, Russia and the US, with energy politics shaping its future. China's role is key. Through the Belt and Road Initiative (BRI) and projects like the Central Asia–China Gas Pipeline and Kazakhstan–China Oil Pipeline, China has secured energy supplies and connectivity. But challenges remain: Central Asia's dependence on Chinese investment, environmental concerns and geopolitical rivalries. Russia wants to preserve influence through transit control, the US to diversify partnerships and counterbalance Chinese and Russian dominance. For Central Asian countries, the solution lies in balancing external pressures while advancing sovereignty, governance and renewable energy transitions. Multilateral frameworks like the Shanghai Cooperation Organization (SCO) can foster cooperation, transparency and equitable benefit-sharing. By integrating sustainability and innovation, energy diplomacy can bring stability and development. A forward-looking approach will be crucial for Central Asia to use its resources while keeping independence in global energy politics.

Conflict of Interest

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References

- [1] AIIB. (2018, August 6). *governance members of bank*. Retrieved from AIIB.
- [2] Aiqun Yu, S. L. (2024, july). *China continues to lead the world in wind and solar, with twice as much capacity under construction as the rest of the world combined*. Retrieved from global enery monitor: <https://globalenergymonitor.org/report/china-continues-to-lead-the-world-in-wind-and-solar-with-twice-as-much-capacity-under-construction-as-the-rest-of-the-world-combined/#:~:text=The%20first%20wave%20of%20%22mega,the%20second%20and%20third%20waves.>
- [3] Akita, H. (2019, September 27). *Russia and China romance runs into friction in Central Asia*. Retrieved from Asia Nikekki.
- [4] Asia, W. B. (2017). *World Bank in Central Asia*. Retrieved from World Bank: <https://www.worldbank.org/en/region/eca/brief/central-asia>
- [5] Bank, W. (2019, june 18). *Belt and Road Economics: Opportunities and Risks of Transport Corridors*. Retrieved from World bank group: <https://www.worldbank.org/en/topic/regional-integration/publication/belt-and-road-economics-opportunities-and-risks-of-transport-corridors>
- [6] Bednarski, L. (2021). *Lithium: The Global Race for Battery Dominance and the New Energy Revolution*. Hurst Publishers.
- [7] Burke, J. (2023, july 6). *Central Asia: Trade with China registers strong growth during first half of 2023*. Retrieved from Eurasia net: <https://eurasianet.org/central-asia-trade-with-china-registers-strong-growth-during-first-half-of-2023>
- [8] Cheang, C. (2019, March 2). *Kazakhstan: End of an Era*. Retrieved from RSIS: <https://www.rsis.edu.sg/rsis-publication/rsis/kazakhstan-end-of-an-era/#.XdWHZ9X7R6s>.
- [9] Chen, F. F. (2013). *China and Central Asia:A Significant New Energy Nexus*. Trinity College, 3-7.
- [10] Chen, X. G. (2020). *Chinese Overseas Development Financing of Electric Power Generation: A Comparative Analysis*. *One Earth*, 3(4), 491–503.
- [11] Cheney, C. (2019). *China’s Digital Silk Road: Strategic Technological Competition and Exporting Political Illiberalism*. *Honolulu: Pacific Forum Issues and Insights Working Paper 8 (19)*.
- [12] China, E. o. (2023). *Xi Jinping Holds Talks with President Sadyr Zhaparov*. Retrieved from Embassy of the People’s Republic of China in the Kingdom of Sweden: http://se.china-embassy.gov.cn/eng/zgxw_0/202305/t20230521_11080836.htm

- [13] China, M. o. (2021). China's Trade and Investment Cooperation under the Belt and Road Initiative. *Beijing: Ministry of Commerce*.
- [14] China., E. p. (2023). *Energy profile China*. Retrieved from International Renewable Energy Agency: https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/Asia/China_Asia_RE_SP.pdf
- [15] CSIS. (2019). China and Central Asia. *Center for strategic and international studies*.
- [16] House, F. a. (2022, 10 25). *China's Influence in Central Asia*: Retrieved from foreign affairs house committee republicans: <https://foreignaffairs.house.gov/china-snapshot-project-central-asia-2/>
- [17] Howe. (2023). *Explainer: The numbers behind China's renewable energy boom*. Retrieved from Reuters: <https://www.reuters.com/sustainability/climate-energy/numbers-behindchinas-renewable-energy-boom-2023-11-15/>
- [18] Howe, C. (2023, 11 15). *Explainer: The numbers behind China's*. Retrieved from Reuters: <https://www.reuters.com/sustainability/climate-energy/numbers-behindchinas-renewable-energy-boom-2023-11-15/>
- [19] Huang, C. &. (2015). Global technology leadership: The case of China. *Science and Public Policy*43(1), 62–73.
- [20] IEA. (2022). *Global EV Outlook 2022*. Retrieved from international energy agency: <https://www.iea.org/reports/global-ev-outlook-2022>
- [21] Jia, Z. &. (2021). How to achieve the first step of the carbon-neutrality 2060 target in China: The coal substitution perspective? *Energy*, 233,
- [22] Joe, C.-S. (2023). *The 'new three': How China came to lead solar cell, lithium battery and EV manufacturing*. Retrieved from China Dialogue.
- [23] Lei Bian, S. D. (2024). China's role in accelerating the global energy transition through green supply chains and trade. *Grantham Research Institute on Climate Change and the Environment*., 2-34.
- [24] Liu, W. J. (2022). Pathways to peak carbon emissions in China by 2030: An analysis in relation to the economic growth rate. *Science China Earth Sciences*, 65(6), 1057–1072.
- [25] Ljungwall, C. (2017). "Mending vulnerabilities to isolation: how Chinese power grows out of the development of the Belt and Road Initiative. *The RUSI Journal* 162, no. 5, 26-33.

- [26] Melniková, L. (2020). China's Interests in Central Asian Economies. *Human Affairs* 30, 239–252.
- [27] Misiągiewicz, J. (2023). Energy security as a research area of international security. *International Relations*, 2, 26.
- [28] Mueller, J. T. (2022). The Dual Dependency of Natural-Resource-Rich Labor Markets in Contemporary Society. *Sociological Theory* 39(2).
- [29] Nedopil. (2023, 2). *China Belt and Road Initiative (BRI) investment report 2022*. Retrieved from Green Finance & development center FISF Fudan University.
- [30] Nyabiage. (2024). *Chinese firms agree to raise investment in DRC copper-cobalt mining deal*. Retrieved from South China Morning post: <https://www.scmp.com/news/china/diplomacy/article/3250881/chinese-firms-agree-raise-investmentdemocratic-republic-congo-copper-cobalt-mining-deal>
- [31] Ozat, M. (2023, 8 22). *Navigating China's Path to Engagement in Central Asia*. Retrieved from Caspian Policy Center: <https://www.caspianpolicy.org/research/energy-and-economy-program-eeep/navigating-chinas-path-to-engagement-in-central-asia>
- [32] Qinhu, X. (2007). China's Energy Diplomacy and its Implications for Global Energy Security. *FES Briefing Paper* 13, 2-8.
- [33] Ren Haiping, Y. Q. (2004). 'New Change in World Energy Geopolitical Structure. *National Energy Security Report*, 153-156.
- [34] Research, E. (2022). *Economic Cooperation between Central Asia and China*. Retrieved from Eurasian Research.org: <https://www.eurasian-research.org/publication/economic-cooperation-between-central-asia-and-china/>
- [35] Safa, H. (2017). The impact of energy on global economy. *Int. J. Energy Econ. Policy*, 287–295.
- [36] Sharif, H. (2015). Global technology leadership: The case of China. *Science and Public Policy*, 43(1), 62–73.
- [37] Umarov. (2020). China Looms Large in Central Asia. *Moscow: Carnegie Moscow Center*, 3-27.
- [38] Umbach, F. (2019). China's Belt and Road Initiative and Its Energy-Security Dimensions. *RSIS working paper*, 4-47.
- [39] Unido. (2022, may 17). *Unido - China Energy Partnership*. Retrieved from United nations industrial development organization: <https://www.unido.org/news/through-renewable-energy-innovation-fund->

reif-unido-and-its-partners-will-support-uruguays-2nd-energy-transition-decarbonizing-transportation-and-industry-sectors

- [40] Vakulchuk. (2019). *China's Belt and Road Initiative through the Lens of Central Asia.* " In *Regional Connection under the Belt and Road Initiative: The Prospects for Economic and Financial Cooperation*, London: Routledge.
- [41] Walsh, J. R. (2020). China and the New Geopolitics of Central Asia. *Asian Survey*, 33(3), 272–284.
- [42] Wang, N. (2022). *Five takeaways from China's BRI engagement in 2022.* Retrieved from Panda Paw Dragon Claw.
- [43] Xia, C., Ye, B., Jiang, J., & Shu, Y. (2020). Prospect of near-zero-emission IGCC power plants to decarbonize coal-fired power generation in China: Implications from the GreenGen project. *J. Clean. Prod*, 271.
- [44] Xiao, X. (2016). The "Belt and Road Initiative" and China-Israeli Relations.". *Journal of Middle Eastern and Islamic Studies (in Asia)* 10, no. 3, 1-23.
- [45] Xinhua. (2018, 9 6). *Insightful! Xi Jinping's discussion of the Belt and Road Initiative over the past five years.* Retrieved from Xinhuanet.com:http://www.xinhuanet.com/politics/xxjxs/2018-09/06/c_1123391245.htm
- [46] Xuanli, L. J. (2021). China's energy diplomacy towards Central Asia and the implications on its belt and road initiative. *The Pacific Review*, Vol. 34, NO. 3, 490–522.
- [47] Zan, T. (2016). Turkey Dream" and the China-Turkish Cooperation under the "One Belt and One Road" Initiative.". *Journal of Middle Eastern and Islamic Studies (in Asia)* 10, no. 3, 50-72.