

1 INTRODUCTION

This paper addresses the EU's engagements with Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan in Central Asia in the energy sector in the era of geopolitical instability and the heightened focus on energy security, diversification of energy supply and energy transition. The states in Central Asia could play an important role in the EU's quest to fulfill its energy needs. Furthermore, some actors voice positive pro-climate rhetoric claiming ambitious renewable energy targets that could be seen as a potential bridge for a more substantive cooperation with the EU. However, despite the potential and already signed joint agreements, the EU has not taken the full advantage of the regional resource potential. Why does this still feel like an uncompleted mission? Are there promising prospects for overcoming the current obstacles and achieving the energy transition goals?

First, the EU lacks a rigorous diplomatic profile in the region and has been more focused on issues arising in its near neighborhood or elsewhere. Second, in Central Asia, there are trends that prevent this cooperation in energy transition to progress because there has been a very slow or no phasing-out of fossil fuels. The key stakeholders in the energy sector wish to gain revenues from the energy trade in coal, gas and oil from various actors. There are also multiple international actors who individually or within joint projects provide resources and assistance and as such the local governments and organizations are not motivated to start the complex applications for EU funding, especially if they may be limited or shared with other countries in

the greater Central Asia. Moreover, the EU is facing competition from China and Russia, and increasingly from other actors such as India, Iran, Turkey, Japan or the USA. These obstacles tend to make the Union and its individual member states tread more carefully when committing time and investments in the region.

Nevertheless, well-informed EU representatives and adjustments in approaches to the local environments could effectively address these barriers. Ultimately, both geographical spaces share the energy transition goals set out to increase the share of renewable energy sources by 2030 and ultimately by 2050. The EU has made commitments in its Strategy on Central Asia (2019) to help the region to transition towards a low-carbon economy, energy efficiency and engagement in projects on renewable energy and to facilitate electricity interconnections. The Union declared Central Asia as a "key region in resources" with a potential in hydroelectric, solar and wind energy. Brussels additionally stated that it would use its energy program EU4Energy to help countries in Central Asia to fully tap into their energy potential and ensure energy security. With good planning, workable timelines and consistent funding which also targets spheres that might be less attractive for competitors, or the competitors are not fully or able to contribute, especially in times of geopolitical tensions, could move the EU-Central Asia energy cooperation forward and closer to achieving the energy transition goals. Such activities include and are not limited to joint projects in capacity-building in energy project management and finance, work with smaller energy communities and vulnerable groups, as well as breaking the stereotypes in financing and more empowerment of women in energy sector.

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2 OPPORTUNITIES IN ENERGY TRANSITION

2.1 OIL

Since the 2000s, the EU has shown more interest in accessing the Central Asian energy resources, gas and oil in particular, and finding a way to develop an energy supply route that would bypass Russia. So far, the EU has not achieved the goal in the gas imports, but it has had more success in oil imports, especially those from Kazakhstan. When using country-specific data to assess the most valuable exports from Kazakhstan, we can see that most of the products went to the European trading partners (approx. 53.9%), followed by Asia (43.8%) and North America (1.7%). There is an option of sending oil through tankers westward across the Caspian Sea to Azerbaijan from Aktau, but the capacity is limited, with around 2.1 million tons sent from there in 2021, and with a possible increase by <u>5 million tons</u>. Further increases require refurbishments; the port managers estimate that they could reach the capacity of 12.5 million tons a year. Other options involve reaching an agreement between Kazakhstan and Iran to revive their oil swap arrangement, which, according to assessments, would lead to exports of 3 million tons of oil annually to Iran's Caspian port of Neka. A less attractive option is to use the spare capacity and transport the oil via China; however, the logistics of this scenario are rather complicated.

The EU should support in this respect alternative transcontinental corridors and an international trans-Caspian traffic route. Kazakhstan would build upon the existing minimal access to the Baku-Tbilisi-Ceyhan pipeline by expanding the connection and bypassing Russia via exporting Kazakh crude to Azerbaijan, and then connecting with the pipeline in Ceyhan. Supporting this route also works well within Kazakhstan's 'New Kazakhstan' program, which stresses the focus on diversification and prioritizing energy transportation. It also works well with the EU's 'Global Getaway' connectivity plan, which helps with supporting the EU's partners' infrastructures. Since this Kazakh program requires several amendments to the Constitution and the adoption of some new laws, there is room for the EU to provide any assistance needed to make these changes smooth and ensure the full participation of civil society. This is an opportunity for Kazakhstan to showcase its desire to reform and move deeper in its process of democratization.

2.2 GAS

So far, the plans to have substantial imports of gas from Central Asia have not materialized and it is not easy to envision reviving the Nabucco pipeline and thus shipping gas from Iran, Azerbaijan and potentially also Turkmenistan. Although, it should be noted that during the recent visits of Europeans at the Iran Oil Show 2022, the Iranian side stated that after the ease of the sanctions, they were <u>ready to supply energy</u> to Europe. In case of Turkmenistan, the Turkmen gas is already tied up with exports to China and should some of it become available, Russia's Gazprom is in a better position to secure it with

the established infrastructure in place. President Serdar Berdimuhamedov paid his first foreign visit to Russia in June 2022, and it is anticipated that he will be more receptive to Russia's wishes when it comes to external engagements. His second visit led to Iran. Both countries oppose the construction of the Trans-Caspian Pipeline and cite environmental reasons. On the one hand, the EU should not disregard the long-standing vision of materializing the EU-Turkmenistan energy relationship, but it needs to be realistic and strongly activate its objectives related to investment, supply and purchase, and on the other one the European companies need guidance and assistance on how to best engage with Turkmenistan on investment, transit and trade issues. Although Turkmenistan has growing ties with other partners, and has accepted loans from China, on a tactical level, it would be still interested in engaging with Europe, but not in the foreseeable future.

At this time, the EU stands a better chance of success in supporting activities surrounding the Southern Gas Corridor, which is expected to deliver 10.5 bcm of gas at full capacity in 2022. By June 2022, it was reported that 6.8 bcm of gas had been exported to Europe and the Azerbaijani ministry noted that they were planning to deliver 16 bcm of gas by the end of the year. The EU can help countries to diversify their supplies and continue its support for the Trans Anatolia Natural Gas Pipeline and the Trans-Adriatic Pipeline, which requires engaging with Azerbaijan, Georgia, and Turkey, as well as an active cooperation with and monitoring of connections to Italy, Greece and Albania. The EU has at its disposal funding for projects of common interests and, based on the transparent and interactive map of existing projects, has already contributed with funding to gas pipelines, electricity lines and underground gas storage and gas compression stations in Southeast Europe and the Middle East. These connectivity projects can be further expanded to Central Asia. The EU can assist with streamlining the projects and processes, including the awards of permits and regulatory practices. It can also help with streamlining the environmental assessment processes and make the whole process more transparent in terms of investors

2.3 RENEWABLE ENERGY SOURCES

The shares of renewables in the national energy mixes of all the countries in Central Asia are negligible, except for hydropower in Kyrgyzstan and Tajikistan. And possessing an estimated 5 % of the world's natural capacity for wind and solar energy, and in need of overcoming barriers in finance, institutional, social and technical spheres. In this arena, the EU has funded and co-organized a workshop in May 2022, the Central Asia Water, Environment and Climate Change Cooperation (WECOOP), which proved to be a great opportunity to engage with the local experts and relevant financial institutions and help with the implementation of small and medium-size projects focused on solar and wind energy generation. The EU is driven by its pledge to reduce emissions as stipulated in the European Green Deal and for that it is going to need a bigger share of renewables and greater green efficiency. What the EU can offer the Central Asian countries not just

fulfilling the declarations from the Paris Agreement but also concrete business, job opportunities and work on targets together to increase renovated energy efficient buildings and engage in clean technological innovations

A data compilation surveying the solar energy potential in the five states reveals that for now more developments have taken place in solar than in wind power and Kazakhstan, with the size of its territory, has the largest (85 %) theoretical solar power potential, yet Uzbekistan and Turkmenistan have more intense solar irradiation. These countries are competing for investments and are open to working with the neighboring China. Kazakhstanreported 51 power plants in operation in 2022. There are smaller solar and wind farms that could be connected to major power grids but there is not much profit for state or big companies in these kinds of projects. Additionally, there is no viable storage for a possible excess of solar power.

China has appealed to Kazakhstan by gifting a 1MV solar plant to the Alatau Innovation Park under its 'Bright Road' within the Belt and Road Initiative. Their soft power strategy succeeded with the work on a 39 million dollars 40 MW solar photovoltaic plant in Karaganda. The European Bank for Reconstruction and Development loaned funding for the construction of a 63 MW solar photovoltaic power plant in Chulakkurgan. In a way, European money finances stretches of the Chinese Belt and Road. The key takeaway from this example is that such collaborations are inevitable in this region, where the governments use multi-vectoral foreign policies and are not motivated enough to look for funding from a sole donor, or specific donors. As such, cutting ties with non-European stakeholders is not a viable request since they do contribute to infrastructure that is necessary for the green energy transition.

2.4 CRITICAL RAW MATERIALS SUPPLY CHAIN

With the green energy transition at heart, the EU could access the proven geological potential of Central Asia. Although getting reliable data and statistical information on minerals used for clean energy technologies is challenging, and missing data about this in some countries (e.g. Turkmenistan) can prevent calculating the concrete shares of the whole region in global reserves, we can still identify shares of individual states. Nevertheless, not having all the required data at hand calls for a more cautious approach and more cautious projections. Central Asia is considered for its diversity of it mineral base, including reserves of most important materials for clean energy application.

There are four technologies that are set to play a big role in the energy transition and would rely on specific materials: electric vehicles, grid-scale batteries, solar panels, and wind turbines. Just to give some examples of widely used elements that are needed in the production of all or some of these technologies, **Kazakhstan stands out as the individual country with the world's largest reserves** of chromium, which is used in wind turbines, and also as its second-largest

producer, while Uzbekistan contributes copper and silver, which are necessary for solar energy. Tajikistan has high proven reserves of zinc, which has is valuable for storage or transport of solar energy. Assessing the reserves of lithium requires further exploration. Moreover, Kazakhstan has a potential to become an alternative energy supply of uranium, to reduce the EU's dependance on Russia. The EU cannot neglect these crucial aspects when it comes to cooperation with Central Asia.

3 CHALLENGES

Data and trends show that although the Central Asian governments officially recognize the need to decarbonize their energy sectors, they continue to rely greatly on coal, natural gas and oil and there is no major phasing out scenario in the foreseeable future. On the contrary, there are reports that show in some cases that the consumption of fossil fuels has even increased. Coal is the major source of electricity, and it is also a source of employment, with towns built around coal mining sites. Also, those in charge of oil, gas and coal industries, and power plants, tend to be close to government officials and converting to greener policies would lead to a significant change of their business models and loss in revenue. Although there is potential for increasing the electricity capacity through renewable energy, the findings reveal that it has not been able to displace electricity produced by fossil fuels.

Despite investing millions of dollars in energy and power grid infrastructure, the countries suffered from power shortages which could greatly affect the local population and get them into severe emergency situations and hardships. There are various causes of these disruptions, and some are linked to the changes in climate and severe droughts. They lead to less hydropower production, which, combined with the population growth, is a risk for countries such as Kyrgyzstan and Tajikistan, which are heavily dependent on hydropower. As has been pointed out repeatedly, the energy infrastructure and power transmission lines are dated and obsolete and in need of rehabilitation. Some reported issues with cryptominers, who moved from China in larger numbers after they banned the mining that is necessary by Bitcoin and other cryptocurrencies. As a result, some governments resorted to restrictions on lighting.

In terms of the implications of Russia's invasion of Ukraine, there are some challenges for the Caucasus and Central Asia. It is anticipated that those with close trade and financial links with Russia will experience declining remittances. Although the energy exporters will benefit from the higher energy prices, Kazakhstan's ability to transport energy resources by pipeline to Novorossiysk has been reduced due to bans by Moscow and the recent shutdowns of the pipeline, which is used to export oil to Europe. Potential losses to Kazakhstan and the exporters were estimated at 500 million dollars. These disruptions are unprecedented considering the previous problem-free transports. With the scale of the exports to Europe, the disruptions not only punish the Kazakh economy, but they also hurt the European partners.

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4 CONCLUSIONS

Going forward, despite the challenges, the EU can expect the Central Asian region to be more cooperative in the upcoming decade. Both regions experienced impacts of the COVID-19 pandemic and are currently also weathering the consequences of the war in Ukraine. It is likely that the European countries and the EU will be encouraged to become more present and engaged in Central Asia. The economic sphere is the key driver, but Europe will face competition from other actors who might be even more committed to spreading their economic and political influence. It is important to remember that there is no viable vision for achieving an integrated region. There are lingering tensions over water and borders, and each state in Central Asia has its own unique development and pace, often embracing multi-vectoral foreign policies.

Interviews with experts reveal that there is currently more optimism among the Europeans toward the engagement with Central Asia, but they are equally cautious about the future role of the EU. The EU will continue to elevate other regions – currently Eastern Europe, primarily Ukraine, and potentially the Balkans, and there is also a shared sentiment that the Union will not be able to project a united and equally committed front in Central Asia. Some member states such as Germany or France will be more involved and will even upload their Central Asia foreign policy to the EU level, while others will be underperforming in this regard. There is a lacking political will and, even at the levels of relevant ministries, a less than optimal engagement. Presently, there is also a lingering hesitation to engage in fear of aggravating Russia to avoid possible punishments, as has been the case with Kazakhstan and the disruptions of energy deliveries.

The EU will increasingly focus on raw materials and the export market, while promoting stability and helping with the green transformation. There is a possibility that Russia's economic problems could provide more space for the EU's engagement in Central Asia, but it must be able to balance the presence of China in the energy sector and also in the renewable energy arena. The EU has the right frameworks in place and the existing projects could provide more sustainable energy options for Central Asia. The 48-month project EU Support to Sustainable Energy Connectivity in Central Asia (SECCA) has kicked off, it is currently in its inception and implementation phases, and it is able to mobilize key experts and train them. There is an important phase of mapping existing legislation, regulation and policy documents and conducting consultations with stakeholders.

It is vital to have clarity on who the relevant stakeholders are and where the funding comes from and goes into. It is not possible to fully isolate activities without considering the programs that are already running, which aim at pooling resources from various donors, who have different objectives but ultimately aim to provide a shared and more sustainable development for the region. An example in this sense is the long-term initiative from the Asia Development Bank called the Central Asia Regional Economic Cooperation (CAREC) program, which also involves the European states through the

European Bank for Reconstruction and Development and the Investment Facility for Central Asia, which work closely with various financial institutions and promote investments in the energy, small and medium-sized enterprises, and social sectors. There is also the CAREC Energy Strategy 2030 that, among other cross-cutting themes, focuses on empowering women in energy.

Considering the projections from the International Energy Agency, the production of critical materials for clean energy applications in Central Asia will overtake the coal production and gradually supplement its role as a supplier of oil and gas to international markets. Unleashing this potential, however, depends on how much investment there is in exploration and better infrastructure; otherwise, we will not see a higher deployment of solar panels, energy vehicles or wind turbines since the current supply of necessary materials is inadequate. Another sector that requires attention is mining infrastructure, which is aging and damages the environment. Without more investment, there might be issues with further mining and extraction of the critical minerals.

5 RECOMMENDATIONS

Although the current energy crisis and the war in Ukraine have slowed down and complicated processes and exchanges, the EU and Central Asia are going in the right direction! However, the EU needs to manage its expectations and commit more capacities and capital. In order to explore all the possibilities for a meaningful cooperation, the following recommendations are necessary to be taken into account:

- The EU and relevant European stakeholders usually tap into their knowledge, expertise and best practices in environmental, climate, but also health and educational policies. The research for this paper has shown that there is a widespread need for quality training in project submission, financing, and management. The level of bureaucracy and technical knowledge associated with preparing the applications for the EU grants and projects is sometimes too high for external countries to have the motivation and will to apply. The local project coordinators work with various benefactors, and they all have their own forms and guidelines. In this sense, the use of local languages to distribute information among the stakeholders is more effective.
 - Work with smaller energy communities and assist them in developing protective measures for vulnerable energy consumers and emergency plans to offset the impacts of electricity shortages or disruptions of energy exports. The EU, in collaboration with the local stakeholders, can facilitate better connectivity in the widely diverse and challenging geographical space and introduce opportunities to citizens, especially the most vulnerable ones, to have a better ownership of energy access via cleaner energy options, and even, over time, be able to resell possible energy excess. This particularly applies to solar energy which could be more expanded and supported by subsidies.

- Work closer with the stakeholders to break the stereotypes which drive specific funding either toward men or women, directing funds related to access to water to benefit mainly women, or contrary, the road infrastructure projects to benefit mainly men and encourage the narrative that everyone in society equally relies on these connections. However, when it comes to the empowerment of women in energy, it is important to guide them more in building relevant regional networks and increase their visibility in energy sector since they are underrepresented.
- Support the Central Asian countries' economic and political structural reforms, while updating their national energy strategies to reflect the recent shocks of the COVID-19 pandemic and the impacts of the war in Ukraine. The focus should be on economic diversification and reduction of socio-economic inequalities to consolidate development gains. Simultaneously, help to reduce reliance on aged power stations and encourage setting up targets for reduction of fossil fuels, and simultaneously assess the risks of decarbonization and create measures to overcome them. Continue with the established Ready4Trade and Hydro4U projects beyond 2023.
- Continuously map and work on the close complementarity and consistency between the bilateral and regional programs of the EU Commission and

- **the Member States**, and find ways to mobilise resources and track progress. This also involves efficiency within international development programs where the EU commits funding to the energy sector, such as the CAREC.
- Commit expertise and investments for better exploration of critical raw materials and better infrastructure to unleash the full potential of the Central Asian countries and their mineral resource base and ultimately actively involve them in research and development of clean energy technologies.
- Factor in Central Asian states dependencies with Russia and the intra-regional platforms that also deal with energy cooperation. The Central Asian countries and Russia held their first inter-parliamentary meeting this year and they will continue in their regional consultations on connectivity and infrastructure, as well as priorities in the energy sector.
- Activate aims from the European Green Deal and encourage projects that target the innovations that improve the air and water quality and make the buildings more energy efficient. Support projects that focus on re-using, repairing and recycling. Involve creative individuals, students and arts in such campaigns and competitions and then promote their work across Central Asia and Europe.

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