

The EU-Kazakhstan cooperation in the field of critical raw materials: Challenges and Strategic Opportunities

Bexultan Zhapar
European Governance Lab, Managing Director

Introduction

Cooperation between the European Union (EU) and Kazakhstan in the field of critical raw materials is of strategic importance to both sides, as Kazakhstan has significant reserves of rare metals and rare earth elements. These resources are needed by the EU to ensure energy transition, the production of batteries and electric vehicles, and the development of high-tech industries, making Kazakhstan a key partner in ensuring Europe's raw material security.

In 2022, the parties signed a Memorandum of Understanding, which was supposed to lay the foundation for the creation of sustainable supply chains; however, its implementation has proven difficult.

Currently, Kazakhstan remains primarily an exporter of raw materials without sufficient processing capacity, while the EU is interested in ensuring stable supplies but does not demonstrate a willingness to invest in the development of local industry. The Kazakh side emphasizes the need for deeper interaction, including not only the export of resources, but also the creation of full-fledged production chains on its territory.

The EU was expected to provide support by involving European companies in the development of processing facilities, technology transfer, personnel training programs, and the creation of sustainable logistics routes for supplies. However, in practice, no significant progress has been observed since the signing of the Memorandum of understanding.

In addition, economic, geopolitical and technological challenges associated with growing competition for resources, global economic changes and regional instability create additional obstacles to the full implementation of the agreements.

The EU continues to focus on the import of Kazakh raw materials, which is of concern to the Kazakh side, which seeks not only exports, but also the development of its own production with high added value. This requires a revision of interaction strategies, development of more detailed mechanisms for financing joint projects, and establishment of clear obligations of the parties within the framework of cooperation.

Resource base of Kazakhstan

Kazakhstan is one of the leading countries in the extraction and export of critical metals such as titanium, beryllium, tantalum, and niobium. According to the European Commission, in 2023, Kazakhstan supplies 65% of the EU's imported phosphorus and 36% of titanium, making it an important partner for meeting Europe's raw material needs (European Commission, 2023).

The country's mining and metallurgical complex accounts for 12.9% of the GDP (Bureau of National Statistics of the Republic of Kazakhstan, 2024). There are 124 deposits of rare metals and rare earth minerals in Kazakhstan, creating significant prospects for expanding cooperation with international partners (Newsline Kazakhstan, 2024).

The development of the mining industry in Kazakhstan was accompanied by the introduction of modern technologies and the attraction of foreign investment. International companies such as Glencore, RioTinto, and Trafigura are actively involved in the extraction and processing of rare metals, contributing to the integration of

Kazakhstan into global supply chains (EU Reporter, 2025). The country is developing the processing of metals, such as beryllium, tantalum, and niobium, which increases the added value of products (MINEX Forum, 2023).

However, ensuring the environmental sustainability of production, implementing ESG standards, and diversifying the economic structure to reduce dependence on raw material exports remain important challenges. Kazakhstan is actively developing a legislative framework to improve the investment climate in the mining sector.

Since 2024, the country has switched to the international reporting standards KAZRC, developed based on CRIRSCO, which makes it easier to attract investors (KAZRC, 2021). Digital platforms such as E-QAZYNA.KZ and MINERALS.GOV.KZ were also introduced, allowing companies to participate in auctions and obtain subsoil-use rights online (MINEX Forum, 2025). This makes Kazakhstan more attractive to its foreign partners.

Another important aspect is the development of infrastructure for mineral export. Kazakhstan is seeking to diversify its transportation routes, including the development of the Trans-Caspian International Transportation Route, which has reduced its dependence on traditional export routes via Russia (Astana Times, 2025). This is especially important in the context of sanctions pressure and global restructuring of supply chains.

In addition to traditional minerals, Kazakhstan has significant reserves of lithium, nickel, and rare-earth elements, which are becoming critical in the context of the global transition to renewable energy (Euractiv, 2025). In recent years, there has been growing interest in developing these deposits from international investors, including companies from Germany, France, South Korea, and China (The Times of Central Asia, 2025).

In 2023, Kazakhstan began producing manganese sulfate, a key component of lithium-ion battery cathodes, indicating its expansion into the production of high-value-added components (Abuova, N., 2024).

Thus, Kazakhstan has all the necessary resources and infrastructure capabilities to strengthen its position in the international market for critical metals. However, to fully realize the potential, active development of processing, investment environment, and logistics infrastructure is required, as well as strategic cooperation with key partners, such as the EU, China, and South Korea.

Memorandum of Understanding between the EU and Kazakhstan

The memorandum, signed in 2022, aims to create sustainable supply chains for critical raw materials and develop battery production and renewable hydrogen (European Commission, 2022).

However, two years after signing, its implementation has remained extremely limited. The main problem is the lack of specific commitments from the EU as well as the lack of financing mechanisms that could facilitate the creation of joint ventures and technology alliances. Kazakhstan, with its significant natural resources, counted the EU's active participation in the development of local processing and integration into the European production chains.

However, European companies remain focused primarily on importing raw materials without offering significant investments in their processing and added value to Kazakhstan.

Kazakhstan has repeatedly expressed interest in receiving a real contribution from the EU in the form of not only technology supplies but also comprehensive programs for training personnel, technical

modernization of production facilities, and raising processing standards (Euractiv, 2023).

However, these initiatives have not yet been developed in practice. One of the key obstacles remains the lack of a clear roadmap for the implementation of memorandum provisions. Despite their formal interests, European investors are reluctant to invest in Kazakhstani projects, citing geopolitical instability, regulatory risks, and high infrastructure costs.

In addition, the legal non binding nature of the memorandum's provisions does not contribute to its effective implementation. Unlike strategic agreements, which imply obligations of the parties, this memorandum is only a framework document that does not impose specific obligations on participants. This makes it a weak tool for attracting long-term investments.

The Kazakh side is considering the need to revise its approach to cooperation and develop mechanisms that will take into account not only the EU's interests in ensuring stable supplies of critical raw materials but also the interests of Kazakhstan in developing processing and industrial production in its territory.

Opportunities for further development of cooperation

To increase the effectiveness of cooperation between the EU and Kazakhstan in the field of critical raw materials, it is necessary to develop new investment incentive mechanisms. An important role here is to create favorable conditions for attracting European capital to the mining sector of Kazakhstan.

However, the Kazakh side emphasizes that it wants not only direct investments but also a real contribution from the EU to the creation of value chains. This implies not only financing projects for the extraction and

processing of raw materials but also the development of educational programs aimed at training qualified personnel, as well as the transfer of advanced technologies and methods in the field of subsoil use and processing of minerals.

Since the signing of the memorandum in 2022, Kazakhstan has not taken significant steps from the EU in these areas. In Kazakhstan, European companies are still more focused on importing finished raw materials than on developing joint production capacities. This creates an imbalance in the relationship, as Kazakhstan seeks not only to supply raw materials but also to develop its own processing industry, which in the long term will ensure sustainable economic growth and reduce dependence on the export of unprocessed materials.

At the same time, the development of transport and logistics infrastructure should become a priority, as current routes for exporting raw materials to Europe require modernization. The introduction of technology exchange and the transfer of advanced methods for mining and processing minerals can also help improve Kazakhstan's position in the international market. Additionally, it is necessary to ensure transparency and control over regulatory processes, and the introduction of uniform reporting and certification standards within the EU can significantly increase investor confidence in the Kazakhstan market.

South Korea's Prospects

As a member of the Minerals Security Partnership (MSP), South Korea actively seeks to strengthen its presence in Kazakhstan through expanded investment and technology cooperation. To increase its influence in the region, it can offer alternative investment projects to

Kazakhstan that facilitate the development of new deposits of lithium, nickel, cobalt, and other rare metals in demand in the high-tech industry.

South Korean companies such as LG Chem and Samsung SDI are interested in sustainable supply chains of raw materials for the production of batteries and other elements of new energy (S&P Global, 2025).

The development of cooperation in the field of battery technologies, including the creation of joint ventures for the production of lithium-ion batteries, is an important area of South Korea's strategy.

South Korea has advanced developments in the field of energy storage and can help Kazakhstan not only supply raw materials but also develop the processing and production of battery system components. This may include the construction of plants for the production of cathode materials, electrolytes, and other chemical compounds, which would allow Kazakhstan to receive additional added value.

Training Kazakhstani specialists and implementing South Korean standards for processing raw materials will create a more sustainable and competitive model of cooperation. South Korea can facilitate the exchange of technologies and knowledge in the field of automation of mining production and environmentally friendly methods for the extraction and processing of rare metals.

This would help Kazakhstan adapt to global environmental standards and increase the level of processing within the country, reducing its dependence on the export of unprocessed raw materials. Joint scientific research and technological initiatives can also become key factors in strengthening South Korea's position on the Kazakhstani market for critical raw materials.

Conclusion

The EU-Kazakhstan cooperation in the field of critical raw materials has significant potential, but its implementation requires more active efforts from both sides. Kazakhstan, with its rich resource base, seeks not only to supply raw materials to Europe but also to develop domestic processing and value-added creation.

At the same time, the Kazakh side expects from the EU not just the import of raw materials, but also a real contribution in the form of creating value chains, investing in personnel training, technology transfer, and the development of processing capacities in the country. However, since the signing of the Memorandum of Understanding in 2022, the EU has not demonstrated significant progress in these areas.

Currently, the main interaction between the EU and Kazakhstan remains focused on the export of raw materials, while the Kazakh authorities emphasize the need for deeper economic cooperation. This includes not only project financing, but also joint initiatives to develop infrastructure, train personnel, and introduce innovative technologies.

Kazakhstan can offer favorable conditions for European companies, including tax incentives and special economic zones, but the lack of specific commitments from the EU is holding back the development of these opportunities.

South Korea can take advantage of this situation and strengthen its presence in Kazakhstan through active investments and technological cooperation. Kazakhstan views South Korea as a promising partner that can offer not only financial investments but also advanced developments in the field of processing rare earth metals, lithium-ion batteries, and other strategically important materials.

In the context of the global transition to a sustainable economy, cooperation between the EU and South Korea can become an important

factor in the development of Kazakhstan's industry and strengthen its position in the global market.

References:

1. Abuova, N. (2024) 'Tungsten supply talks strengthen UK-Kazakhstan critical minerals partnership', The Astana Times, 6 December. Available at: <https://astanatimes.com/2024/12/tungsten-supply-talks-strengthen-uk-kazakhstan-critical-minerals-partnership/> (Accessed: 3 March 2025).
2. Astana Times. (2025) 'Kazakhstan can reshape trade routes and resource security amid supply chain shift', The Astana Times, February. Available at: <https://astanatimes.com/2025/02/kazakhstan-can-reshape-trade-routes-and-resource-security-amid-supply-chain-shift/> (Accessed: 3 March 2025).
3. Bureau of National Statistics of the Republic of Kazakhstan (2024) National Accounts Data. Available at: <https://stat.gov.kz/en/industries/economy/national-accounts/publications/157626/> (Accessed: 3 March 2025).
4. European Commission, 2022. Kazakhstan. [online] Available at: https://international-partnerships.ec.europa.eu/countries/kazakhstan_en#:~:text=To%20increase%20the%20resilience%20of,and%20Kazakhstan%20in%20November%202022 [Accessed 3 March 2025].
5. European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, Grohol, M., Veeh, C. (2023) Study on the critical raw materials for the EU 2023 : final report. Publications Office of the European Union. <https://data.europa.eu/doi/10.2873/725585>

6. Euractiv. (2023) Kazakhstan's critical materials potential ripe for EU supply chain resilience. [online] Available at: <https://www.euractiv.com/section/economy-jobs/news/kazakhstans-critical-materials-potential-ripe-for-eu-supply-chain-resilience/> [Accessed 3 March 2025].
7. Euractiv. (2025) 'EU must invest quickly in Kazakhstan's rare earths production for green energy transition and global competition', Euractiv, February. Available at: <https://www.euractiv.com/section/eet/news/eu-must-invest-quickly-in-kazakhstans-rare-earths-production-for-green-energy-transition-and-global-competition/> (Accessed: 3 March 2025).
8. EU Reporter (2025) 'Kazakhstan is an important element in the diversification of supplies of rare earth metals', EU Reporter, 25 January. Available at: <https://www.eureporter.co/kazakhstan-2/2025/01/25/kazakhstan-is-an-important-element-in-the-diversification-of-supplies-of-rare-earth-metals/> (Accessed: 3 March 2025).
9. Kazakhstan Association of Public Reporting for Exploration Results, Mineral Resources and Mineral Reserves (KAZRC). (2021) Kazakhstan Public Reporting Code for Exploration Results, Mineral Resources and Mineral Reserves (KAZRC). Available at: <https://kazrc.kz/wp-content/uploads/2021/08/KAZRC.pdf> (Accessed: 3 March 2025).
10. MINEX Forum. (2023) 'Kazakhstan has developed a comprehensive plan for the development of rare earth metals for five years', MINEX Forum, 3 November. Available at: <https://minexforum.com/2023/11/03/kazakhstan-has-developed-a-comprehensive-plan-for-the-development-of-rare-earth-metals-for-five-years/> (Accessed: 3 March 2025).

11. MINEX Forum. (2025) 'Kazakhstan's unified subsoil use platform processes 506 applications', MINEX Forum, 11 February. Available at: <https://minexforum.com/2025/02/11/kazakhstans-unified-subsoil-use-platform-processes-506-applications/> (Accessed: 3 March 2025).
12. Newsline Kazakhstan (2024) 'Kazakhstan identifies 124 deposits of rare and rare earth metals', Newsline Kazakhstan, 26 March. Available at: <https://newsline.kz/article/1155615/> (Accessed: 3 March 2025).
13. S&P Global, 2025. China, South Korea battery makers drive growth despite capacity regionalization. [online] Available at: <https://www.spglobal.com/market-intelligence/en/news-insights/research/china-south-korea-battery-makers-drive-growth-despite-capacity-regionalization> [Accessed 3 March 2025].
14. The Times of Central Asia. (2025) 'Kazakhstan's rare earth ambitions hindered by investment and control challenges', The Times of Central Asia, 27 February. Available at: <https://timesca.com/kazakhstans-rare-earth-ambitions-hindered-by-investment-and-control-challenges/> (Accessed: 3 March 2025).