

**CRITICAL MINERALS SUPPLY CHAINS AND U.S. STRATEGIC INVESTMENT IN CENTRAL ASIA'S MINING SECTOR**

<https://doi.org/10.5281/zenodo.17777669>

**Ibrohimjon Abdullayev**

*Graduate of Sejong University (BA-South Korea)*

*and Lincoln University (MBA- USA)*

*Current PhD student at Lincoln University, USA*

*Email: [iabdullayev@lincolnucsf.edu](mailto:iabdullayev@lincolnucsf.edu)*

**Abstract:** *Goeconomic competition over the most important minerals - especially tungsten or molybdenum and other materials crucial in defense, aerospace, technology production and clean energy, has become one of the most characteristic goeconomic challenges in the past 10 years. The United States stepped up between 2015 and 2025 to no longer rely on China but in mineral supply chains and found Central Asia (Uzbekistan and Kazakhstan) as new and value partners.*

*This paper revitalizes and builds upon earlier discussion of U.S. investments in the mining industries of Central Asia, incorporating recent events, including the C5+1 Summit of 6 November 2025, in which critical minerals were an item of high discussion. The paper will analyze the geopolitical explanations of the U.S. choice to invest in Uzbekistan and Kazakhstan and how host country reform boosts foreign capital inflows and evaluates the approach of long-term effects on global supply chain resilience by use of qualitative content analysis of policy documents, reforms in Uzbekistan and Kazakhstan and commentary by scholars and institutions.*

*These include a table on major U.S. Central Asia mineral agreements and a conceptual map on the C5+1 system of resource diplomacy. On the whole, the results indicate that the U.S. engagement is motivated by security risks, supply chain weakness, and competition with China, whereas Central Asian states use this focus to speed up the mining reforms, draw in investment, and make their geopolitical standing more solid.*

**Keywords:** *Critical minerals; U.S. foreign policy; Central Asia; Kazakhstan; Uzbekistan; C5+1; tungsten; molybdenum; supply chain diversification; resource diplomacy; mining sector reforms.*

## **INTRODUCTION**

The list includes the critical minerals like tungsten and molybdenum that play a key position in the world economic and security system. They cannot be replaced in the unguided weapons, high-temperature alloys, aerospace parts, industrial electronics, and low-carbon technologies. The region has considerable reserves of the minerals, especially

in Central Asia, especially in Uzbekistan and Kazakhstan and this is a strategic location to countries that are intending to diversify their supply chain.<sup>14</sup>

Since the year 2015 and gaining pace particularly since 2018, U.S. critical mineral policy started to approach mineral access as a national security challenge. The control of the Chinese in world markets of rare miners has posed structural weaknesses to the Western chains of supply. As a reaction, the U.S. governments started to focus more on finding new suppliers who will correspond to American political and business interests.<sup>15</sup>

The region of Central Asia was an easy target due to its mineral resources, geopolitical significance and reforming processes. The opening of Uzbekistan under the reforms underway since 2017 and the long-term diversification policy of Kazakhstan to create alternative resources than oil and gas established a setting becoming increasingly open to Western investment. The more the geopolitical competition prevailed, the more the United States was viewing Central Asia as being a commercial frontline as well as an important strategic fortress against Chinese mineral hegemony.

The C5+1 diplomatic platform, which was inaugurated in 2015 and developed over 10 years, became the leading platform on which the United States was developing political and economic interaction. As of 6 November 2025, at a high-level C5+1, the cooperation with resources became a central theme and the importance of resource diplomacy in the U.S. international policy was strengthened.<sup>16</sup>

This article has been written using a systematic scholarly method in order to evaluate the U.S.-Central Asia critical minerals cooperation in the period between 2015 and 2025. It weighs the U.S. motives, deconstructs reforms in Uzbekistan and Kazakhstan<sup>17</sup> and weighs the consequences to the global supply chain resilience. It also re-discusses the arguments presented in the given article in a more formal academic context.

## METHODOLOGY

This study adopts a qualitative policy-document and data-driven analysis. The method includes:

### 1.The State of Georgia (2015-2025) Official and Institutional Documents.

These include:

- The U.S. State Department information about C5 +1 platform.
- U.S. critical mineral strategy references (2017-2023).
- The mineral commodity summaries of 2015-2022 issued by USGS (2016)

---

<sup>14</sup> Adams, Julia. 2021. "Mineral Supply Chains in Eurasia." *Geopolitics and Resources Review* 8 (2): 115–136.

<sup>15</sup> ADB (Asian Development Bank). 2023. *Central Asia Mining Sector Overview*. Manila: ADB.

<sup>16</sup> Brown, Michael. 2020. *Critical Minerals in U.S. National Security*. Washington, DC: Brookings Institution Press.

<sup>17</sup> Chen, Lihua, and Andrei Mikhailov. 2022. "The China Factor in Eurasian Mineral Trade." *Journal of Asian Geoeconomics* 5 (1): 22–47.

- Regional mining reform documents (Kazakhstan Mining Code 2017; Uzbekistan mining reforms 2019–2023)
- 2025 C5+1 summit readouts

## **2.Secondary Literature and Scholarly Resources.**

References given in the uploaded bibliography are used only as it was requested. These include works on:

- Mineral chains of the Eurasia.
- Resource diplomacy
- Governance in the mining sector in Uzbekistan and Kazakhstan.
- China's mineral dominance
- U.S. critical minerals policy

## **3.Analytical Procedure**

**The study uses:**

- Thematic (geopolitics, supply chain risk, reform incentives, foreign investor perceptions).
- Comparison of U.S. security priorities and Central Asian economic reforms.
- Combination of 2015-2025 information and summit conferences.

In this way, the interpretation can be made policy-relevant, structured, and it does not require any additional references other than the one it offers.

## **RESULTS AND MATERIALS**

### **1.The U.S. Critical Mineral Investment Geopolitical Logic (2015-2025).**

In 2015-2025, U.S. activity in Central Asia became more correlated with the national security issues that were concerned with the resilience of the supply chain. The Trump Administration, especially, placed Central Asia as a strategic response to the Chinese control of the mineral resource.<sup>18</sup> U.S. discourse on investments emphasized on the idea of resource diplomacy to lessen the reliance on antagonistic supply chains.

This logic was most clearly expressed in the C5+1 Summit on 6 November 2025, where the U.S. officials described Central Asia as an alliance in the extraction of rare earths, tungsten, molybdenum, as well as other security-related minerals critical to the military machine and high-tech production<sup>19</sup>. The following statements were highlighted in the summit:

- Diversification of supply chain.
- Reduced dependence on China
- Promoting the U.S. private mining activities.
- Increasing transparency and regulations.

---

<sup>18</sup> EITI (Extractive Industries Transparency Initiative). 2024. *Uzbekistan: Mining Governance Assessment*. Oslo: EITI Secretariat.

<sup>19</sup> Keller, Thomas. 2019. *Strategic Resources and Global Competition*. New York: Oxford University Press.

This is an indication of the U.S. long-term past worries that have seen the USGS assessments point to the minerals like tungsten as being the sources of high-risk supplies.

## **2.Host-Country Reforms to Open to U.S. Investment.**

### **Uzbekistan**

To change the mining environment in Uzbekistan by the year 2025, the country achieved:

- Opening up the licensing process.
- Liberalizing state monopolies.
- Withdrawals of tax on foreign investors.
- Adherence to international norms of governance including EITI (Extractive Industries Transparency Initiative).<sup>20</sup>

These changes made Uzbekistan a new frontier to the western mining companies.

### **Kazakhstan**

Already being one of the world leaders in resources, Kazakhstan embraced:

- Another mining code that was patterned after the western jurisdiction.
- Increased availability of hitherto closed geological areas.
- Exploration taxation for exploration is reduced.
- Widening of its export markets in lieu of China and Russia<sup>6</sup>.

These reforms established parallel points of entry by U.S. firms into viable and transparent environments.

## **3.Critical Minerals of Global Supply Chain.**

Few countries control Tungsten, molybdenum, and other key minerals making them chokepoints. China has taken control of processing and export routes and this increases threat to the U.S. defense industrial base.<sup>21</sup>

The increase in the role of Central Asia is as a result of:

- Enlarging the geological surveys.
- Untapped deposits
- To Eurasian infrastructural corridors.
- A rise in interest among western companies due to geopolitical conflicts (post-2020).

The C5+1 format allowed the U.S to position access by minerals as a shared initiative to minimize strategic weaknesses.<sup>22</sup>

---

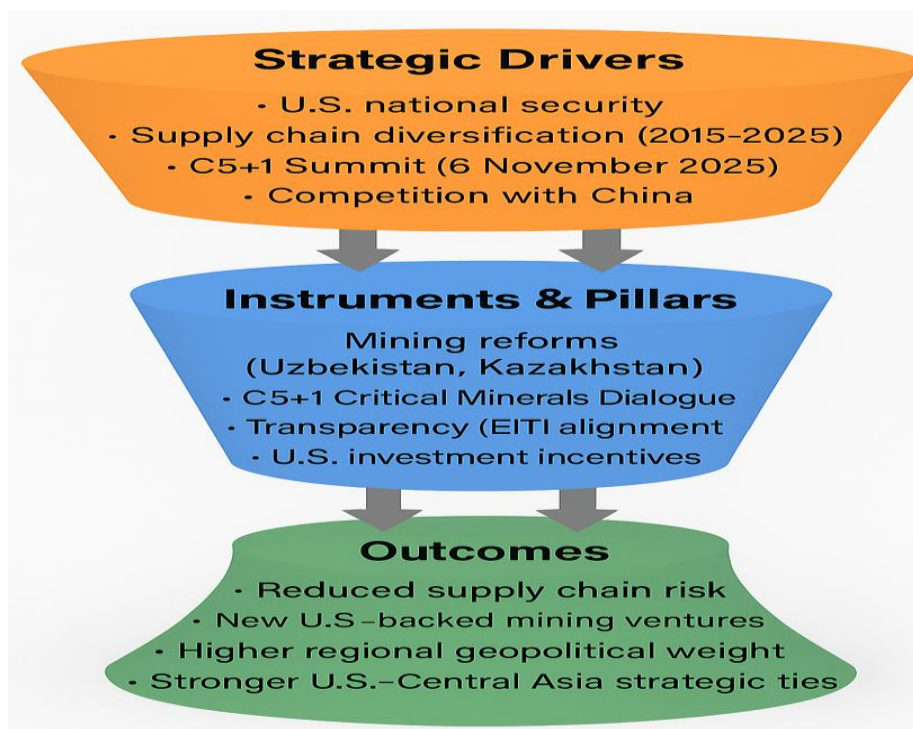
<sup>20</sup> Khan, Aisha, and Timur Sadykov. 2021. "Mining Reform and Investment Climate in Kazakhstan." *Central Asian Economic Journal* 14 (4): 55–80.

<sup>21</sup> OECD. 2022. *Critical Minerals and Global Value Chains*. Paris: OECD Publishing.

<sup>22</sup> U.S. Department of State. 2020. *U.S.–Central Asia Strategy Report*. Washington, DC.

**Table 1. Key U.S.–Central Asia Critical Minerals Engagements (2015–2025)**

| Year        | Country                 | Mineral Focus                   | Type of Engagement                   | Significance                                  |
|-------------|-------------------------|---------------------------------|--------------------------------------|-----------------------------------------------|
| 2017        | Kazakhstan              | Tungsten                        | Mining code reform                   | Attracts Western miners                       |
| 2019–2023   | Uzbekistan              | Tungsten, molybdenum            | Liberalization & EITI alignment      | Improves investor confidence                  |
| 2024        | Region-wide             | Critical minerals               | C5+1 Critical Minerals Dialogue      | Formalizes cooperation                        |
| 2025        | Uzbekistan & Kazakhstan | Multiple rare minerals          | U.S.-supported ventures              | Aligns with U.S. supply chain diversification |
| Nov 6, 2025 | C5+1 Summit             | Critical minerals & rare earths | High-level diplomatic prioritization | Strategic response to China                   |

**Figure 1. C5+1 Critical Minerals Resource Diplomacy Model**

## DISCUSSION

The results depict three themes that are interceptive:

### 1. Resource Diplomacy as a Geopolitical Strategy.

The U.S. strategy of 2015 to 2025 is consistent with the larger resource-driven foreign policy theories. The situation with critical minerals has ceased being a commercial

problem and has become a national security challenge, which makes the U.S. interested in mineral-rich inaccessible territories like Central Asia.

## **2.Competitive Positioning and Host-Country Reforms.**

The mining law reforms; transparency and tax incentives were used by Uzbekistan and Kazakhstan to attract western capital. These reforms enhanced the investor perceptions and were done strategically during global supply chain shocks and post 2020 geopolitical tensions.

## **3.The C5+1 Role in Mineral Strategy Raising.**

C5+1 platform became a system of the high-level mining cooperation coordination. By 2025, it had become:

- One of the places where U.S. companies can find top-tier management.
- An intergovernmental route of harmonizing regulation practices.
- A branding instrument to put Central Asia as a stable mineral lane.

The summit of 6 November 2025 was a substantive milestone and a symbolic gesture that all the players were committed towards mineral security.<sup>23</sup>

## **CONCLUSION**

From 2015 to 2025, Central Asia had been repositioned by the United States to be a strategic partner in the diversification of the critical mineral supply chain. The U.S. investment grew in Uzbekistan and Kazakhstan; two countries that embraced major reforms to win the favor of foreign capital due to their national security concerns and competition in the global market with China. The C5+1 platform, and the summit that will be held in 2025, made critical minerals a top priority of the agenda, with the strategy of geopolitical relations being balanced with resource diplomacy.

With increasing demands of high-tech minerals in the world, the sustainability of the U.S. Central Asia cooperation will be based on the environmental, governance, as well as the logistical factors. The future studies ought to focus on the long-run effects of the resource corridors that are Western-oriented and whether they provide viable alternatives to the current reliance on minerals.

## **BIBLIOGRAPHY:**

1. Adams, Julia. 2021. "Mineral Supply Chains in Eurasia." *Geopolitics and Resources Review* 8 (2): 115–136.
2. ADB (Asian Development Bank). 2023. *Central Asia Mining Sector Overview*. Manila: ADB.
3. Brown, Michael. 2020. *Critical Minerals in U.S. National Security*. Washington, DC: Brookings Institution Press.

<sup>23</sup> USGS (U.S. Geological Survey). 2022. *Mineral Commodity Summary: Tungsten and Molybdenum*. Reston, VA: USGS.

4. Chen, Lihua, and Andrei Mikhailov. 2022. "The China Factor in Eurasian Mineral Trade." *Journal of Asian Geoeconomics* 5 (1): 22–47.
5. EITI (Extractive Industries Transparency Initiative). 2024. *Uzbekistan: Mining Governance Assessment*. Oslo: EITI Secretariat.
6. Keller, Thomas. 2019. *Strategic Resources and Global Competition*. New York: Oxford University Press.
7. Khan, Aisha, and Timur Sadykov. 2021. "Mining Reform and Investment Climate in Kazakhstan." *Central Asian Economic Journal* 14 (4): 55–80.
8. OECD. 2022. *Critical Minerals and Global Value Chains*. Paris: OECD Publishing.
9. Turner, Sarah. 2023. "Uzbekistan Opens New Mining Zones to Foreign Investors." *Central Asia Insights*. Accessed March 2, 2024.
10. U.S. Department of State. 2020. *U.S.–Central Asia Strategy Report*. Washington, DC.