# POWERING THE ENERGY, DIGITAL AND GREEN TRANSITIONS: EBRD SUPPORT FOR THE CRITICAL RAW MATERIALS MARKET IN ITS REGIONS

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Despite the economic importance of the raw materials that underpin electrification, digitalisation and greening, until recently surprisingly little attention had been paid to the growing challenges of securing timely, diverse and sustained access to metals, minerals and other natural materials. Covid-19, Russia's war on Ukraine and renewed geopolitical competition has focused increased attention on the sourcing of these critical raw materials. This article looks at the increasing demands for those vital minerals and the challenges in securing reliable supplies, highlighting the EBRD's role and activities in this crucial area.

The security of supply of fossil fuels has been a serious concern to politicians and economists for years, and has taken on even greater importance due to the Russian invasion of Ukraine. Yet the growing challenge of securing timely, diverse and sustained access to metals, minerals and other natural materials has received limited attention until recently.

Many non-energy raw materials are not only vital to produce a broad range of goods and applications used in everyday life, but also to develop high-tech products and emerging innovations, for example, towards more environmentally friendly technologies. Simply put, our modern life – in all its dimensions, be it personal, social, commercial or family – is in thrall to the rocks and liquids that provide the raw material input for the technologies on which our daily lives depend. Those rocks and liquids, of course, consist of various metals, minerals and natural raw materials that pepper the periodic table.

As we move to a world defined by the energy, digital and green transitions, our world becomes one increasingly powered by technology filled with those raw materials. Cobalt, graphite and lithium for batteries to power our electric cars; tungsten to make our mobile phones vibrate; gallium and indium to light our LEDs; silicon for our semiconductors; and platinum for hydrogen fuel cells and electrolysers, to name a few.

As that technology evolves, we rely even more on the raw materials that are essential to its functioning. Given the economic importance of the raw materials that underpin electrification, digitalisation and greening, where they have a limited or high-risk supply source, they have become known as critical raw materials (CRMs).

The International Energy Agency tells us that in 2040 the world is expected to need four times as many critical minerals for clean energy technologies as it does today.[1]

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Very little mining of these materials currently occurs in Europe, and production from recycling is unable to meet the growing demand, boosting reliance on external sources.

Unfortunately, however, CRM supply chains are often opaque and complex, and subject to increasing risk of disruption from recent long-tailed, and ongoing, global events – the Covid-19 pandemic, rising competition between western economies and China, and Russia's invasion of Ukraine.

These events have created market volatilities and distortions, enabling some supplier countries to consolidate strong positions in the CRM market, while also isolating others from the supply chain. This leads to a situation where economies, their jobs and industries that rely on CRMs become vulnerable to those volatilities and distortions.

1 https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions, (last access on 19 September 2023).

Governments the world over are therefore understandably keen to diversify their sources of CRMs for the green/digital transitions and ensure that their CRM supply chains are resilient enough to support the industries of the future, deliver on the energy transition and protect our national security.

Against this background, the Bank is keen to help its economies play a role in meeting the challenges of CRM supply volatility. It does this by helping those economies that are actual or potential suppliers of CRM to develop their resource base and become part of a more diverse supply of CRMs feeding that global demand.

The Bank can do this in two ways. First, by lending or investing in sector exploration or production companies and second, by helping to modernise governance and regulation of the minerals sector, as a means of improving the investment climate. Such an improvement will make it easier to attract more and better investment as a means of driving sector development and expansion.

The EBRD's role in lending and investing in the minerals sector is relatively well known. Less known is its role in helping to modernise governance and regulatory frameworks as a means of enhancing the business environment, and thus driving investment in minerals sector development.

## THE **WHY**, **WHEN**, **WHO**, **WHAT** AND **HOW** OF EBRD TECHNICAL COOPERATION IN THE MINERALS SECTOR SUPPORTING GOVERNANCE AND REGULATORY REFORM:

**Why:** The EBRD's minerals sector technical cooperation helps build or strengthen policy, law, regulation and governance with the aim of attracting more and better investment as a means of driving sector development and enabling the sector to make a greater contribution to broader economic growth.

**When:** The EBRD's minerals sector technical cooperation usually precedes the Bank's lending/investment activities in the sector, or can run alongside that lending/investment, with the aim of amplifying the positive impact or mitigating any potential negative impact of that lending/investment.

**Who:** The EBRD's minerals sector technical cooperation supports policymaking authorities (cabinet, ministries), regulatory authorities (mining regulator, geological surveys) and other implementation authorities.

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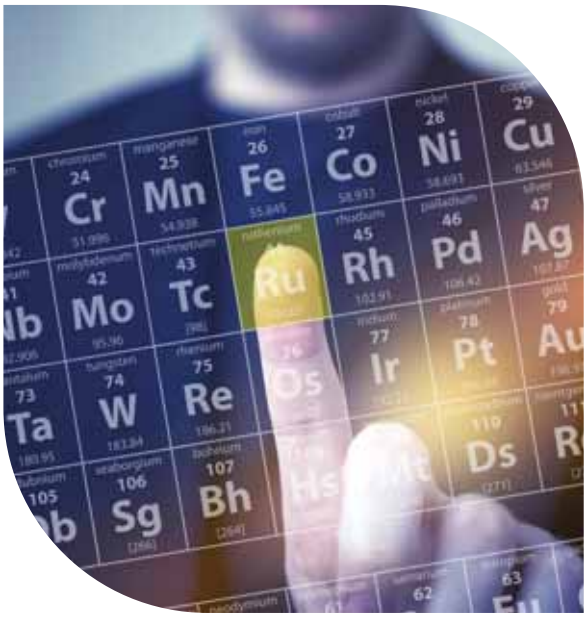


**What:** The EBRD's minerals sector technical cooperation helps to identify, adopt and operationalise proven best practice policies, laws, regulation, governance and methodologies/approaches, as well as training and capacity-building.

**How:** The EBRD's minerals sector technical cooperation programmes are designed jointly by EBRD sector specialists and in-country counterparties, implemented by highly qualified and extensively experienced external consulting advisers, supervised by EBRD sector specialists and are largely or wholly grant-funded.

The EBRD's minerals sector technical cooperation supports a broad spectrum of activities across a full range of mineral sector issues. Examples of types of activities and partner countries include the following:

**Policy/strategy development:** Mineral sector policy helps governments clarify and publicise the overall objectives and approaches for how minerals will be developed and is intended to guide the development of a country's mineral resources as a foundation for national economic development. Policy should aim to address several interconnected priorities: establishing clear investment policies to encourage investment, ensuring clear delineation of institutional responsibilities, creating a well-balanced fiscal regime for mining activities, setting up environmental and social safeguards consistent with international best practices, and introducing critical standards for transparency and good governance of the sector. Mineral sector policy should guide development of a country's mineral resources in a comprehensive way that considers the technical, economic, environmental, social and other mining-related aspects of the sector. The Bank's support activities here can include help both to establish the policy development framework and to develop the policy itself.

**Example:**

In **Georgia** and **Uzbekistan**, working with the government to develop a modern mineral sector policy and policy development framework designed to attract investment, establish responsible operations, protect the environment and increase revenues to government.

**Preparing minerals sector legal framework:** Upon adoption of new or revised mineral sector policies, new or revised laws are required to provide a firm legal basis for implementation of approved policies.

Bank support activities here can include help in preparing new primary laws and amendments to existing primary (mining, subsoil) laws.

**Example:**

In **Georgia**, **Mongolia** and **Uzbekistan**, working with the governments to prepare new mining laws, with the aim of creating a favourable legal environment and as a means to operationalise new, more modern, policies to attract more and better investment.

**Preparing regulations to implement new primary law, together with support in implementing the law and regulations:** Upon adoption of new or revised primary laws, new or revised secondary legislation – in particular regulations, guidance, methodologies and so on – will be necessary to practically implement and operationalise approved policy.

Bank support activities here can include help preparing new regulations, guidance and methodological frameworks to add the necessary detail to the general provisions of primary law. These regulations enable the functional implementation and operationalisation of policy in each topic area. Drawing on the provisions of law and policy, among the subtopic areas covered are:

- Institutional arrangements and regulatory governance
- Award and licensing of mineral rights
- Fiscal/tax provisions
- Geodata management
- Cadastral management
- Environment protection
- Land access and use
- Labour and safety
- Social and cultural safeguards
- Value addition and mining-related development
- Categorisation of minerals
- Classification and reporting of exploration results, and mineral resources and reserves
- Mine closure, reclamation and reinstatement

**Capacity-building, training and support in practical implementation:** Besides preparing the regulations and methodologies needed to operationalise policy in the subtopic areas noted above, capacity-building and training for officials involved in implementing specific regulatory areas are also necessary, along with help with practical implementation of the new regulations and approaches.

Examples of EBRD support for practical implementation activities among the subtopic areas outlined above include the following.

**Geodata management:** Modern systems and methodologies to capture, store, process and disseminate geoscience documents, maps and data – ideally in digital online form – are among the crucial tools available to accelerate inward investment into the minerals sector. Accessible geoscientific data (geodata), information and advice encourage mineral resource companies to invest by reducing exploration risk and the entry cost for them. This leads to higher expenditures to explore for mineral deposits – the first step to sustainable mining investments. Accessible digital geodata also help national governments understand their resource potential, which allows them to regulate activities and plan economic developments in a sustainable manner.

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Unfortunately, obsolete methods are often used to record and store geodata, with much of the information available only in antiquated/non-digital form (for example, paper or disk). As the digitisation of geodata should contribute substantially to improving the transparency and wider accessibility of this vital resource to develop the sector, this is an area of keen interest for EBRD technical cooperation support.

EBRD support activities here can include establishing/strengthening viable geodata management practices such as database and data management, analysis capacity and clear rules for ownership and use of geodata.

**Example:**

In **Mongolia**, working with the Mineral Resources and Petroleum Authority of Mongolia to establish a National Geoscience Database. Before operationalisation of the database, valuable geoscientific information was fractured and maintained across a number of paper and digital databases. Integrating these sources into one coherent system ensures all information is accessible and consistent – a key step to attract increased investment. This project covered design, hardware, software, installation and training.

**Example:**

In **Ukraine**, working with the Ukraine Geology Service (UGS) to accelerate the digitisation of the country's huge collection of geological reports in its hardcopy archive.

This archive is an irreplaceable treasure trove of geoscience information, captured over decades in the context of state-funded and private exploration campaigns whose total cost may reach several billion euros and whose contents are also estimated to be worth billions of euros. EBRD support for UGS has four goals:

1. Increasing accessibility of geoscientific data, information and advice to encourage mineral resource companies to invest.
2. Enabling the government to better understand its resource potential, allowing it to regulate activities and plan economic developments in a sustainable manner.
3. Helping to protect the Ukrainian hard-copy archive from the more immediate risk of damage or destruction during the conflict with Russia.
4. Ensuring the digitalised documents can be readily available, as soon as possible, to contribute to ongoing physical infrastructure damage limitation and reconstruction efforts. Geodata are critical for those efforts in three ways, in that they identify the location, nature and grade of:

a) raw materials that will be essential for the physical reconstruction of the country (construction materials for roads, buildings)

b) CRMs that will be a key input for the digitalisation, electrification and greening of the Ukrainian economy (such as copper, cobalt, graphite, titanium and lithium), which are expected inevitably to be part of the country's reconstruction effort

c) CRMs that can be exported to the EU and other foreign countries to generate significant revenue for the reconstruction effort, and to reduce the EU's dependency on a few suppliers (rare earths, lithium and so on).

Having the geodata documents digitalised and ready in a public portal to attract investment to the sector once the security situation in Ukraine improves – without having to wait the likely years it could take without the intervention of this project – should make a major and quick contribution towards the reconstruction and recovery of the Ukrainian economy.

**Fiscal regime and revenue management:** A fair and predictable mining taxation regime is critical to increase market competitiveness, attract legitimate and responsible investment, and enhance the sector's near- and long-term development and economic growth prospects.

Bank support activities here can include design of a modern royalty/tax-based system of payments. Additional work can include implementing revenue management approaches to facilitate more equitable distribution of mining benefits and prudent investment of mining revenues, as well as investor eligibility requirements and measures to track beneficial ownership and transfer pricing.

**Examples:**

In **Georgia**, working with the Ministry of Finance to design and implement a market-based reporting and revenue monitoring system and introduce a modern royalty/tax-based system of payments.

In **Mongolia**, working with the Ministry for Mining and Heavy Industry and EITI Mongolia to design, adopt and implement a framework to track, and account for and publish sector revenue, ownership, production and operational data.

**Standards for classifying and reporting exploration results and mineral resources and reserves:** Adopting a global best practice independent reporting standard for the sector will improve the accuracy and reliability of reporting. This, in turn, will improve access to better information for existing or new investors in the sector.

EBRD support activities here can include helping with the transition from older (Soviet-era) standards to more modern, investor-focused standards (for instance, CRIRSCO/JORC based standards); helping to restate and reassess deposits according to newer standards; helping to establish a framework to identify and certify competent experts; providing support to develop the reporting code; and helping to prepare relevant laws, decrees and regulations.[2, 3]

The capacities, capabilities and experience of the EBRD in supporting the modernisation of sector governance and regulation described above – allied with its investment resources – places the Bank on a very strong footing to have a major impact on the development of the sector.

Given the centrality of CRMs to broader economic development in its green, digital and electrified forms, the Bank's role in the sector is likely to expand, along with its impact across the EBRD regions.

**Example:**

In **Kazakhstan** and **the Kyrgyz Republic**, working with the government on the adoption and implementation of best practice standards for classification and public reporting of mineral exploration results, mineral resources and mineral reserves – a key means to bolster investor confidence in the sector in Kazakhstan and the Kyrgyz Republic. EBRD support is helping these two countries transition from Soviet-era reporting standards to more modern investor-focused standards.

2 Environmental Finance (18 July 2023), "Australia to align standards with ISSB". Available at: https://rb.gy/9fxdj, (last accessed 19 September 2023)

3 The ESRS are being drafted by the European Financial Reporting Advisory Group pursuant to the EU Corporate Sustainability Reporting Directive, which entered into force in January 2023.

## THE EBRD'S REFORM SUPPORT TEAM AND MINERALS SECTOR DEVELOPMENT IN UKRAINE

In addition to its broad support for minerals sector reform and development across its economies, the EBRD also implements a Ukraine-focused programme which helps the government tackle various mineral sector development issues. An overview of this programme's work is set out below.

Before Russia's invasion of Ukraine, the Ukrainian construction industry relied mostly on domestically produced raw materials. Now, reconstruction of roads, buildings and facilities depends largely on imported building materials. Difficult times, however, require innovative solutions, with waste from infrastructure destroyed by the war becoming an important source of input materials for the reconstruction of Ukraine.[4] With that in mind, enhancing circularity in the minerals industry and attracting more investments into operations in the CRM value chain are key directions of the post-war reconstruction of Ukraine.

The EBRD is supporting the reform and development of the minerals sector in several ways, with the goal of drawing investment. One way the Bank helps sector reform and development is through the work of EBRD- supported reform support teams (RSTs). These teams are composed of professionals from outside the Ukrainian civil service who are retained to work in ministries on a temporary basis to implement priority reforms and transform the ministries themselves.

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One such RST, supporting mineral sector reform, is based at the Ministry of Ecology and works closely with the ministry and the Ukrainian Geological Survey. From the outset of the war, UGS and the RST have been working to develop a map of raw materials used in construction, as a means to speed up identification and extraction of materials that can be used in reconstruction efforts. These materials include more than 20 different types of minerals and 6,000 subsoil areas (mineral deposits), the lion's share of which represent approved reserves and promising resources that can be distributed to interested developers.

4 https://www.epravda.com.ua/publications/2023/03/28/698387/, (last accessed on 19 September 2023).

Additionally, RST advisers on minerals support a newly formed government entity in developing stimulus measures to attract investment into extraction of construction minerals used to restore objects damaged due to the ongoing conflict.[5]

RST advisers are also helping to coordinate and monitor an EBRD technical cooperation project that supports UGS in the digitisation of Ukraine's vast archive of geological data. Advisers' work will help ensure the protection of these data from damage or destruction and their continued availability to support mineral extraction in aid of reconstruction.

Together with UGS, RST advisers helped to develop a Partnership Roadmap 2023-24 which the European Commission endorsed on 20 March 2023. The actions agreed as part of this action plan – once the conditions on the ground allow for their implementation – will help to rebuild and modernise Ukraine's economy while also supporting the country to align with the EU's policies and regulatory frameworks. These include the application of EU and international ESG standards, as foreseen in the Memorandum of Understanding with the European Union on a strategic partnership on raw materials.[6]

On 5 April 2023, the Verkhovna Rada Committee on Environmental Policy and Nature Management established a working group to study international experience and develop legislative proposals to improve the legislative regulation of strategic and critical minerals in Ukraine.[7] RST advisers on minerals have been included as participants in the working group's work focus on aligning Ukrainian legislation in the area of raw materials to the EU best practice and regulations.

5 Operational headquarters for the provision of construction materials (products) for the purpose of restoring objects damaged as a result of the armed aggression of the Russian Federation - Decree of the Cabinet of Ministers of Ukraine of 13 July 2022 No. 790. Available at: https://www.kmu.gov.ua/npas/pro-utvorennia-operatyvnoho-shtabu-iz-zabezpechennia-budivelnymy-materialamy-t130722, (last accessed on 19 September 2023).

6 https://ec.europa.eu/docsroom/documents/46300/attachments/1/translations/en/renditions/native, (last accessed on 19 September 2023).

7 https://komekolog.rada.gov.ua/news/Povidomlennja/76187.html, (last accessed on 19 September 2023).