Securing the Future: Environmental and Social Sustainability in Ukraine's Mining Sector

Description

Overwhelmed for almost four years by Russia's large-scale invasion of its territory, Kyiv is nonetheless aware that promoting responsible mining is essential not only to meet European demand but also to ensure ethical and sustainable economic recovery in post-war Ukraine.



Thanks to its abundant resources of critical materials, Ukraine is a key strategic partner for the green energy transition. However, the significant environmental and social challenges will make investment management and ESG (environment, social, governance) reforms all the more complex.

A European framework for the responsible use of critical materials

Critical raw materials (CRMs) heavily influence the European Union's energy and geopolitical strategy. The Critical Raw Materials Act (CRMA), introduced as part of the Green Deal Industrial Plan, was designed to boost Europe's clean energy production capacity. It is accompanied by the Net Zero Industry Act, which accelerates the industrial development of green technologies. Although Europe still lags behind the BRICS group in terms of CRM control, it intends to make up for this by forging strategic partnerships, first and foremost with Ukraine, whose location and resource wealth make it a natural strategic partner.

The July 2021 EU-Ukraine Strategic Partnership on critical materials, established through a Memorandum of Understanding (MoU), is not just about securing supply; it includes firm commitments to environmental sustainability, social standards, and good governance (ESG). The agreement calls for legal and regulatory reforms, the promotion of responsible extraction practices, and support for research and technological innovation to modernize extraction and treatment processes. Regular exchanges of information and due diligence mechanisms would ensure that these commitments are translated into concrete progress. The MoU adds the economic and social development dimensions by encouraging the modernization of the Ukrainian mining sector while maintaining compliance with strict environmental standards. It further includes commitments to strengthen research, promote cleaner technologies, and improve transparency throughout the value chain. A key part of the agreement concerns the technological modernization of extraction and refining processes, as well as increased support for research and innovation, notably for "greening" mining activities.

As an extension of this Partnership, the EU produced a Roadmap for 2023-2024. This was later extended by a strategic roadmap prepared by Ukraine's Ministry of Environmental Protection and Natural Resources, covering 2025–2030 and looking ahead to 2030 and beyond. The roadmaps emphasize innovation and transparency as a foundation for developing Ukraine into a regional processing hub beyond 2030. In addition to the EU–Ukraine partnership, the United States has emerged as a key actor, as reflected in the signing of the U.S.–Ukraine Minerals Deal on April 30, 2025. Nevertheless, the European Commission proceeded with approving the first wave of strategic projects under the Critical Raw Materials Act in March and June 2025. While Ukraine's role in the international raw materials supply chain continues to expand, the roadmap underscores that the country remains committed to seeking foreign investment, whether from the EU, the U.S., or other partners, that adheres to strict environmental and social standards to avoid the replication of extractivist models.

Environmental and social risks: a challenge for Ukraine

The Ukrainian mining sector faces numerous ecological and social challenges, including inadequate waste management, resource depletion, and outdated industrial practices. To address these problems, a national strategy needs to reconcile economic development with ecological imperatives.

Investing in low-energy and resource-efficient technologies is a well-known first response. But to firmly anchor ESG principles, we need to go further. Rational management of natural resources must include all aspects of mining activity, starting with waste. In Ukraine, the issue of mine tailings goes beyond economic or ecological damages but is also a significant social problem. A study carried out in 2023 shows that the density of accumulated mining waste in Ukraine is 6.5 times higher than in the USA and 3.2 times higher than in the EU. This is mainly due to the lack of infrastructure for treating toxic industrial waste. Current storage and disposal conditions do not meet health standards and aggravate the pollution of air, surface water, groundwater, and soil.

Solutions do exist, however, such as reusing industrial waste in building materials. This type of approach, which is still underdeveloped, represents a promising – albeit costly – field of investment for Ukraine's foreign partners.

Preserving resources for tomorrow

As part of rational nature management, a strategy for protecting deposits would mitigate their depletion or loss at the time of extraction. Preserving known mineral deposits protects their availability for future generations, while limiting the adverse social and ecological effects of mining activity. Several European countries, such as Austria, Portugal, Slovakia, the Czech Republic, Sweden, and the UK, have successfully integrated this approach into their land-use planning policies. Today, this combination of mineral planning and spatial policy is one of the most effective strategies for protecting subsoil resources.

While these measures can mitigate some of the negative externalities of mining, they are not sufficient to eliminate all social and environmental impacts. To meet these challenges, investment decisions must aim to modernize the Ukrainian mining sector without exacerbating existing imbalances. A "systemic" approach is needed to take into account the indirect and long-term effects of mining. Without it, we risk betraying the principles of a "just transition". Mining cannot be based on a single, uniform model, but must strike a balance between local needs and global objectives. This requires collaboration at all levels of governance, involving public, private, and civil society players. Possible responses include the creation of strategic partnerships adapted to local contexts and the integration of foreign aid within a rationale of strengthening social conditions in the most vulnerable communities. These efforts are not only aimed at improving the current mining sector: they also pave the way for Ukraine's sustainable and equitable reconstruction.

Prospects for rebuilding Ukraine

The market value for mining key energy minerals is expected to reach 500 billion USD by 2040 according to the IEA's Global Critical Minerals Outlook 2025. With its substantial reserves of lithium, nickel, and cobalt, representing at least half of the focus energy minerals, Ukraine should not be overlooked for the investment opportunities that lie not only in the extraction of these minerals, but also in the processing and production of batteries and advanced technologies.

While in 2016 Europe may have only accounted for around 4% of global investment in mineral exploration 2016, despite consuming 25% and 30% of the world's metals, a strategic shift has since emerged. The EU strengthens its commitments to diversifying supply chains and increasing investment in domestic and partner-country mining projects. These include its initiatives with Ukraine, evidenced by the EU-Ukraine Strategic Partnership and increased financial commitments to strategic mining projects on the European continent. As Dutch MEP Thijs Reuten reminded us in an interview with Euronews on the subject of Ukrainian minerals, this approach requires ambition and decisiveness: *"the EU needs to be stronger, bolder, faster, and more courageous, but not at the expense of our principles."*

According to the Geological Survey of Ukraine, the country contains 25 of the 34 critical materials recognized by the *European Critical Raw Materials Act*. To attract investors, Kyiv has set up mining concession auctions and published an Investment Atlas listing the opportunities available, whether through conventional tenders or production sharing agreements (PSAs). Some concessions offer 50-year operating licenses, such as the Dobra lithium deposit or the

Stremyhorodske titanium deposit, not to mention numerous unexplored reserves.

But if Ukraine is to reap the rewards of this defining moment, the development of its resources must respect ethical and sustainable principles. It's not just the economic value of the deposits that is at stake: it is how these resources are exploited that will determine the country's future, but stopping at extraction would be a mistake. Processing the materials within its borders is an essential opportunity to attract more foreign investments and retain the added value that these natural resources bring. This means creating a framework conducive to investment in the processing industry, through tax incentives, support for technology start-ups, and investment in research and development.

Beyond the amounts invested, the key question remains about the investors themselves. Their interests can have lasting consequences, so it goes without saying that each project should be planned with long-term development in mind. Whether these partnerships are with Europe, the US, or other G7 partners, Ukraine must aim for a business model that maximizes the benefits for local communities, rather than letting the profits, both material and financial, escape abroad. The recent minerals agreement with the United States demonstrates a potential mutually beneficial partnership, but it raises questions about long-term development impact. It nonetheless challenges the EU to match the ambition with its own investment strategy. By building on these principles and safeguarding its economic agency, Ukraine would be best positioned to achieve a just, sustainable, and sovereign reconstruction.

Thumbnail: Pixabay.

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