Critical Minerals

The Scramble for Oil 2.0

Strategic Review

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Executive Summary

Global Context: The New Geography of Power

Critical minerals, including Rare Earth Elements (REEs), have emerged as the defining strategic resources of the twenty-first century. They are neither scarce nor consumed in vast quantities, yet they underpin almost every advanced technology - from precision weapons and semiconductors to renewable energy systems and medical imaging. Together they form the invisible architecture of modern economic and military power.

Their importance is structural rather than volumetric. Batteries, magnets, catalysts and power electronics depend on a narrow suite of materials - lithium, nickel, cobalt, graphite, and the rare earths - whose absence can halt entire industries. Control over their production, processing, and certification has become the new determinant of industrial strength and geopolitical leverage. These materials have become Oil 2.0: the energy of the digital age, concentrated not in wells but in mines, refineries, and separation plants.
As with oil, the primary vulnerabilities stem from refining and processing rather than from geological factors or the geographical distribution of mineral resources. While mineral deposits are distributed globally, refining and separation capacity are heavily concentrated in a few jurisdictions, above all China. This asymmetry has transformed midstream capacity - the stage between mining and manufacturing - into the decisive arena where market power meets national strategy.

China's Industrial Dominance

China occupies the commanding heights of the critical minerals economy. Through decades of industrial planning, subsidies, and technological transfer, it has consolidated control over roughly 70% of extraction capacity, 80% of rare-earth separation, and more than 90% of graphite processing. These capabilities give Beijing structural leverage over supply chains central to the clean-energy and defence sectors of its competitors. China have used supply chain dominance as their primary tool of leverage and control against the West.

Chinese policy defines critical minerals as strategic resources, embedding them within a wider framework of industrial upgrading and technological self-reliance. Export licensing, price controls and environmental standards are now used as instruments of statecraft. For investors, China's position represents both a source of stable scale and a systemic risk: diversification is possible only by creating parallel midstreams that meet Western compliance and ESG standards. Successful companies emerging in this difficult landscape will be lucrative opportunities.

Western Realignment: Strategic Autonomy and Industrial Policy

The United States, European Union and their partners are responding with coordinated industrial strategies designed to rebuild capacity and reduce exposure. The United States has operationalised this through the Inflation Reduction Act (IRA), Foreign Entity of Concern (FEOC) rules and targeted defence-sector investment.

These measures have repositioned Washington as a market-shaping actor rather than a passive buyer, linking subsidies and tax credits to domestic or allied sourcing.

Europe has moved in the same direction through the Critical Raw Materials Act (CRMA), updated trade regulations and the integration of due-diligence standards across corporate and financial law. The CRMA establishes extraction, processing and recycling benchmarks - 10, 40 and 25% respectively by 2030 - supported by traceability systems and sanctions alignment. Brussels' approach aims to combine ethical sourcing with strategic autonomy, linking resource policy to both climate and security goals. These goals however are a far cry from autonomy, which is unlikely to be feasible without Ukraine's resources, including those currently occupied by Russia in the east of the country.

Japan offers a third model, leveraging public-private coordination through JOGMEC, long-term offtake agreements and stockpiling. Its experience following the 2010 rare-earth embargo – one of the first cases of China weaponising critical minerals - has made it a reference case in resilience through diversification, recycling and alliance-based procurement.

For investors, these realignments signal enduring state intervention in what were once purely commercial markets, handed over to China in many cases. Compliance, auditability and origin certification now determine access to subsidies, contracts and even exchanges. Verified supply is increasingly priced as a premium asset class.

Market Dynamics and Investment Outlook

The market is fragmenting into two tiers. "Clean" material - audited, ESG-compliant and non-sanctioned - commands premium pricing, while unverified or high-risk material trades at a discount through opaque intermediaries. Sanctions on Russian metals and energy have accelerated this bifurcation, pushing new production into non-Western networks and raising due-diligence risk for global buyers.

Energy transition demand is expanding faster than replacement capacity. Electric vehicles, grid storage and offshore wind dominate growth, driving double-digit annual increases in demand for lithium, nickel and REEs through 2035. Yet permitting delays, capital intensity and processing bottlenecks continue to constrain supply. Investors entering the sector are exposed less to resource risk than to regulatory timing, permitting cycles and infrastructure availability.

Corporate strategies are shifting toward vertical integration, recycling and technological substitution. European laboratories are developing magnetless motors, manganese-based lighting and improved magnet recycling, while North American firms are investing in midstream facilities designed to meet IRA and FEOC compliance. These innovations remain nascent but mark a structural decoupling from Chinese processing.

Russia, Ukraine and the European Response

Russia remains a significant player in palladium, nickel and titanium, arguably its only real leverage beyond oil against Western pressures. Sanctions since 2022 have created a two-tier metals market, with grandfathered stock trading at benchmarks and new Russian supply discounted through secondary routes. Export controls on software, reagents and mining equipment have delayed Russian projects and increased dependency on Chinese substitutes.

The European Union's nineteenth sanctions package, adopted in September 2025, extended restrictions to Russian LNG and maritime logistics while maintaining limited exemptions in nuclear and aerospace sectors. These measures illustrate the complexity of enforcing resilience without destabilising key industries.

Ukraine, by contrast, represents potential rather than disruption. Its reserves of graphite, lithium and titanium could make it a future cornerstone of European supply, once conditions permit secure investment and verification. The EU has committed to supporting Ukraine's integration into its critical-minerals framework as part of reconstruction planning.

The Legal and Regulatory Architecture

Critical minerals now sit at the intersection of trade, climate and human-rights law. The OECD Due Diligence Guidance, the UN Guiding Principles on Business and Human Rights and the EU's Corporate Sustainability Reporting and Due Diligence directives collectively transform voluntary norms into enforceable market standards. Compliance now defines competitiveness: only traceable, verifiable material can qualify for public financing, major contracts or listing on leading exchanges.

This expanding legal perimeter also creates a new field of opportunity. Companies able to demonstrate credible governance, transparent sourcing and measurable decarbonisation performance are emerging as preferred partners for both governments and institutional investors. Legal clarity, once seen as a constraint, is becoming a differentiator.

Strategic Implications for Investors

The critical-minerals sector represents both risk and strategic upside for investors. Supply concentration, export controls and standards-based fragmentation are transforming a once-homogeneous commodities market into a complex, politically mediated ecosystem. The winners will be those positioned in verified, allied-compliant midstream capacity – refining, recycling and advanced materials processing - where value is highest and access most restricted.

The long-term trend points to a premium on transparency, traceability and alliance-aligned production. Capital will favour projects that combine technical feasibility with regulatory compliance, geopolitical neutrality and low-carbon credentials. Joint ventures that integrate Western finance with Global South resource potential offer particular promise, provided governance and auditability standards are met.

In essence, the market is shifting from resource abundance to refining scarcity. Critical minerals and REEs have become the building blocks of technological sovereignty, and investment in their secure supply chains is now both an industrial and a strategic imperative.

Key Takeaway

Control over critical minerals and rare earths has become the new fulcrum of geopolitical and industrial rivalry. Yet the asymmetry is striking: only minute quantities are required - both in mass and in value - in both mass and value, to underpin entire technologies and economies. Their strategic importance rivals that of oil in the twentieth century, yet their value lies in processing, certification and trust, rather than extraction. For policymakers and investors alike, the task of the next decade is to rebuild and secure the midstream - the chemical and metallurgical heart of the new global economy.

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