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MONOPOLY AT THE MIDSTREAM: CHINA'S CRITICAL MINERAL GRIP VS. INDIA'S GREEN INDUSTRIAL TRANSITION

AUTHORED BY:

Hridbina Chatterjee

The global political economy is undergoing a profound structural shift where economic networks are no longer merely instruments of trade, but primary arenas of geopolitical conflict. Under the framework of weaponized interdependence, asymmetry in globalized networks allows central hub states to leverage operational chokepoints for strategic coercion. Nowhere is this dynamic more acutely visible than in Beijing's calculated control over critical minerals and rare earth elements (REEs). China currently controls roughly 60 percent of global rare earth extraction and over 80 percent of its refining and processing capacity (as detailed in the **IEA Global Critical Minerals Outlook** and **IEA Rare Earth Elements Analysis)**, alongside dominant market shares in graphite, cobalt, and lithium, tracked by the **USGS Mineral Commodity Summaries**.

Beijing's consolidation of the supply chain spans every level of production, from raw extraction and oxide-to-metal conversion to downstream manufacturing of sintered Neodymium-Iron-Boron (NdFeB) permanent magnets. This multi-link chokehold enables China to exert asymmetric leverage over global industrial policy. The geopolitical risk of this concentration is evident in export licensing frameworks implemented by **China's Ministry of Commerce (MOFCOM)**. Beijing's regulatory regime mandates strict export licenses for critical medium and heavy rare earths, including dysprosium, terbium, gallium, and germanium, while restricting the export of proprietary extraction and refining technologies. By using market concentration to impose operational delays and potential supply cutoffs, Beijing has transformed fundamental industrial inputs into strategic instruments of statecraft.

STRATEGIC VULNERABILITIES IN INDIA'S INDUSTRIAL PUSH

This weaponization poses a direct challenge to India's domestic economic modernization. New Delhi's flagship industrial strategy centers on **Production Linked Incentive (PLI)** schemes designed to turn India into an export-oriented manufacturing hub for clean energy, advanced chemistry cell (ACC) batteries, electric vehicles (EVs), and defense electronics. However, these programs face systemic vulnerabilities due to their deep reliance on Chinese upstream inputs.

India's green energy and e-mobility targets rely heavily on imported Chinese components. For instance, India relies on China for up to 90 percent of its imported permanent magnets, which are critical for EV traction motors, wind turbine generators, and precision-guided defense systems. Similarly, national targets for solar photovoltaic expansion remain heavily dependent on imported Chinese wafers, ingots, and polysilicon. While India's PLI schemes offer financial incentives to scale domestic downstream assembly, they have historically struggled with the lack of midstream refining capacity, creating an industrial policy mismatch. Without a secure, domestic supply of processed mineral inputs, Indian manufacturing remains vulnerable to weaponized supply disruptions, price volatility, and geopolitical leverage from Beijing.

INTERNAL POLICY MECHANISMS AND NATIONAL COUNTERMEASURES

To mitigate these vulnerabilities, New Delhi has transitioned from passive resource procurement to an integrated sovereign security posture. Central to this strategy is the **National Critical Mineral Mission (NCMM)**, backed by a multi-year sovereign allocation designed to fund exploration, processing infrastructure, recycling, and strategic stockpiling. Under the mission, the Indian exchequer has institutionalized a strategic mineral buffer rule, aiming to stockpile essential inputs like tantalum, germanium, and antimony to insulate domestic defense manufacturing lines from sudden external supply shocks.

Concurrently, the Ministry of Mines launched dedicated initiatives to build alternative supply chains, such as the Critical Mineral Recycling Incentive Scheme. By directing capital toward urban mining, India aims to recover lithium, cobalt, nickel, and rare earths directly from e-waste, industrial scrap, and end-of-life

batteries. The government has also reformed its upstream legal architecture by amending the Mines and Minerals (Development and Regulation) Act, allowing private firms to mine and process critical atomic minerals previously reserved exclusively for state enterprises.

These regulatory reforms are reinforced by state-backed acquisition vehicles like **Khanij Bidesh India Limited (KABIL)**, a joint venture formed by National Aluminium Company, Hindustan Copper, and Mineral Exploration Corporation. Mandated to acquire overseas mineral assets, KABIL has secured lithium exploration rights in Argentina's "Lithium Triangle" and entered joint developments in Australia. However, domestic resource extraction faces structural bottlenecks. While India holds vast monazite sand deposits along its coasts and unmapped inland reserves, turning raw deposits into high-purity industrial metals requires complex refining techniques that face environmental hurdles, high capital demands, and long development timelines.

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MULTILATERAL PARTNERSHIPS AND THE MINERALS SECURITY PARTNERSHIP

Recognizing that pure self-sufficiency in critical mineral supply chains is impossible, India is actively aligning its economic policy with broader international security frameworks. A key pillar of this strategy is India's entry into the **Minerals Security Partnership (MSP)**, a US-led coalition of partner nations designed to catalyze public and private investment in secure, ESG-compliant critical mineral supply chains.

Through the MSP and the Quad Critical Minerals Initiative, New Delhi collaborates with partners like Australia, Japan, and the United States to build alternative refining hubs and establish co-financing mechanisms for strategic mining projects. This alignment helps counter market manipulation—such as target price drops meant to undercut non-Chinese mining ventures—by offering price-stabilization tools and preferential off-take agreements among trusted partners. Furthermore, India's bilateral partnerships with mineral-rich nations in Africa, South America, and Central Asia offer an alternative to traditional, highly extractive infrastructure deals by focusing on local value-addition and technical capacity building.

However, minilateral mechanisms face practical hurdles. Aligning trade standards, environmental regulations, and subsidies across different sovereign nations takes time. Crucially, the Western-led coalition still lacks the midstream processing capacity required to replace Chinese suppliers in the short term. For India, participating in these security alignments involves balancing strategic autonomy with the practical realities of industrial supply chains, ensuring its alliance commitments translate into tangible, near-term supply chain security.

THE PATH AHEAD: NAVIGATING STRATEGIC AUTONOMY AMIDST GEOECONOMIC FRICTION

India's struggle to secure its critical mineral supply highlights a major shift in modern statecraft: national security is now deeply tied to midstream industrial capacity and raw material supply chains. Beijing's control over critical minerals demonstrates how economic integration can be weaponized to slow down a geopolitical rival's industrial growth and green energy transition. For New Delhi, addressing this vulnerability requires balancing short-term economic realities with long-term strategic resilience.

To safeguard its manufacturing goals, India must continue combining domestic reforms with international partnerships. While programs like the National Critical Mineral Mission and overseas asset purchases through KABIL provide a strong baseline, domestic success ultimately depends on rapidly scaling industrial-scale refining infrastructure and building advanced processing capabilities. Internationally, multilateral arrangements like the Minerals Security Partnership offer valuable protection, but they cannot fully replace the need for domestic processing capacity. As geoeconomic competition intensifies, India's ability to project power, run its advanced industrial sector, and meet its climate commitments will depend on its success in breaking free from external supply chain leverage.

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