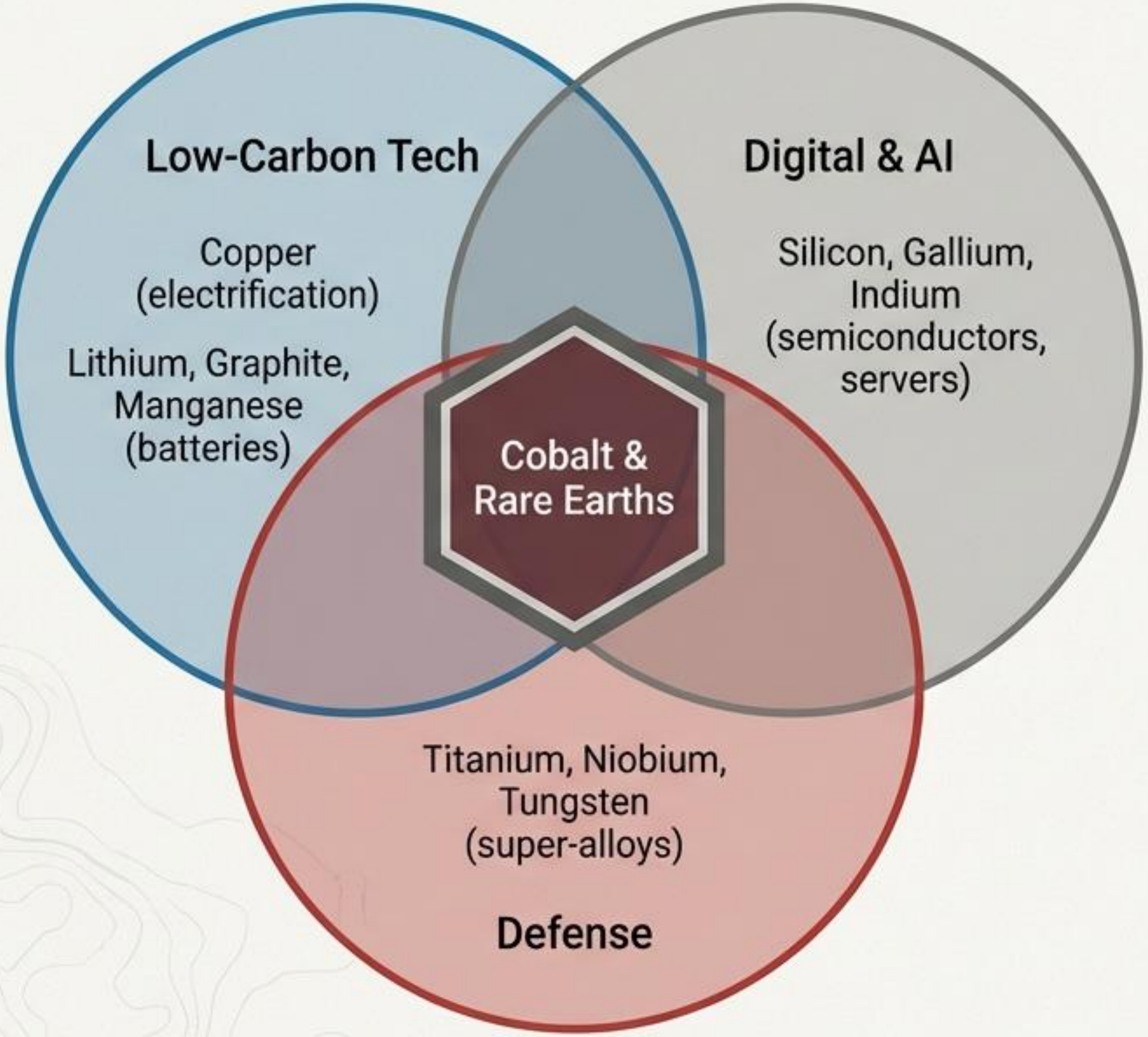
The Mines of Empires

A Strategic Briefing on the Geopolitics of Critical Minerals, Supply Chain Weaponization, and the Future of Global Power.

Fands - LLC

The Superposition of Criticalities



Tactical Defense Consumption

F-35 Fighter: 400 kg of rare earths

Arleigh-Burke DDG-51 Warship: 2,600 kg

Virginia-class Submarine: 4,600 kg

The Illusion of Distributed Supply and the Refining Monopoly

Global Extraction Map

Global Refining Capacity

CHINA represents **40% to 90% of global refining capacity** for **all critical metals**

Extraction is dictated by geology. Refining is dictated by industrial strategy.

The Deliberate Disarmament of American Mining

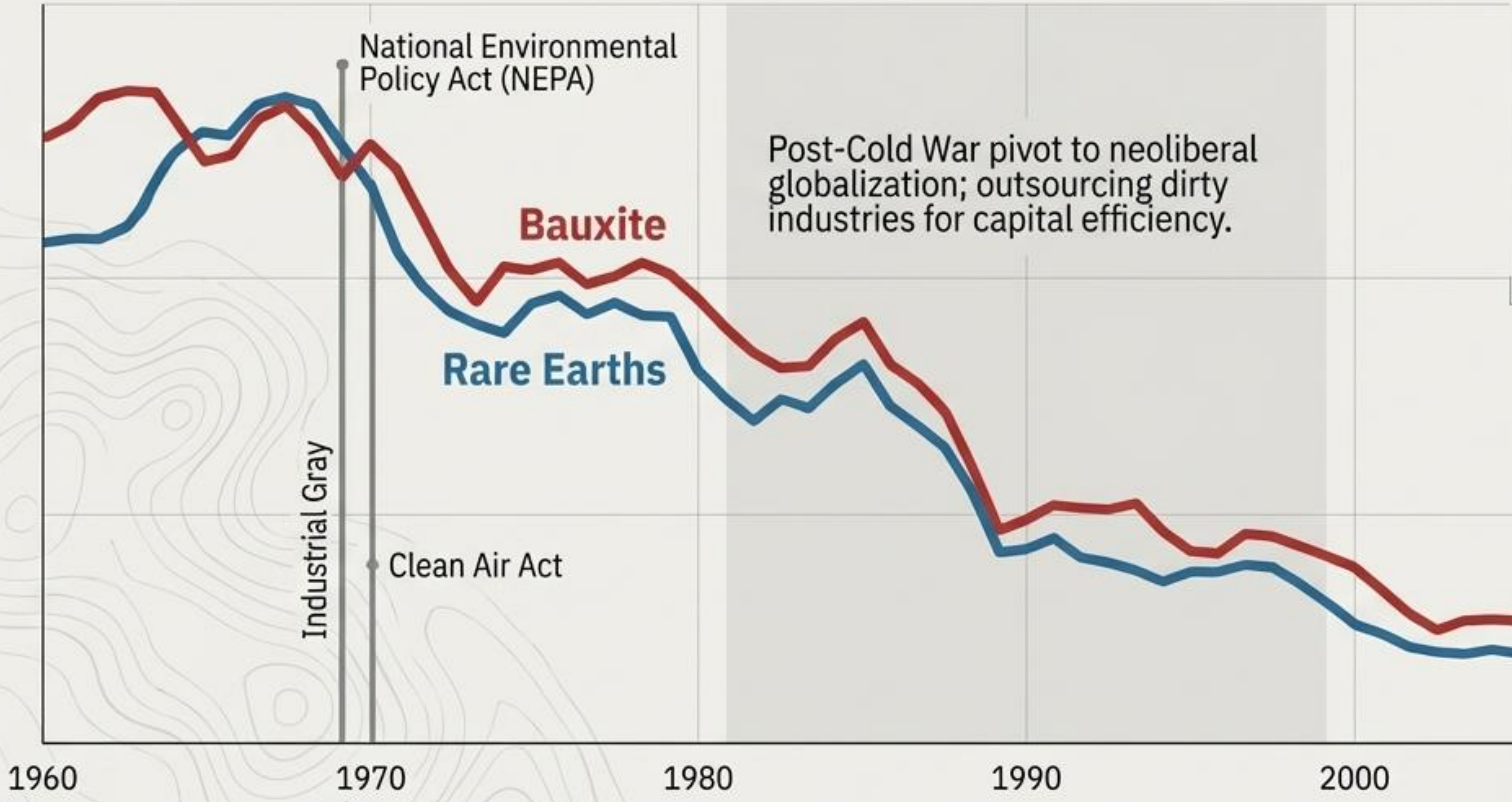
Vulnerability Dashboard

US Refinery Capacity:

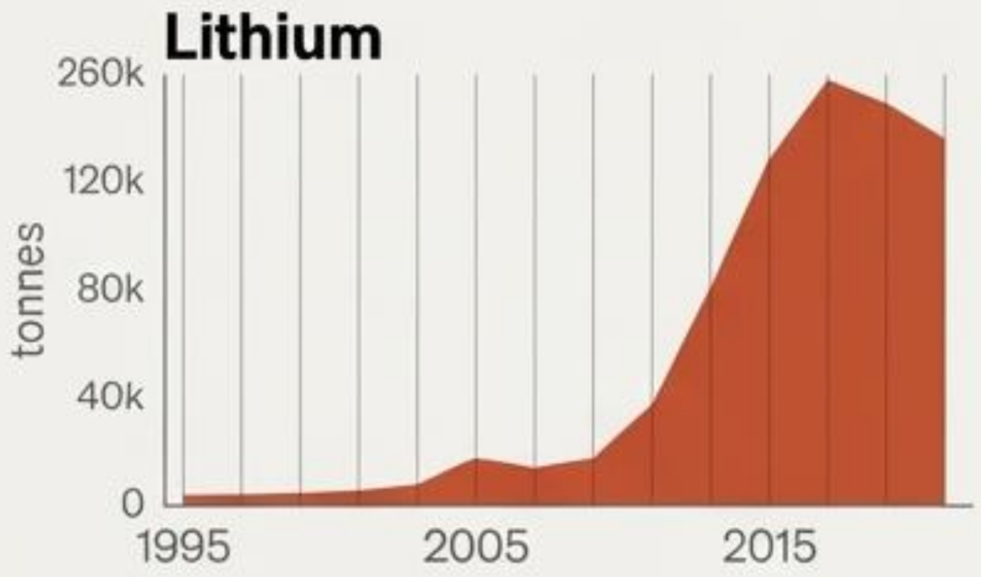
1970: 17 Refineries
1989: 8 Refineries
Today: 2 Active Refineries

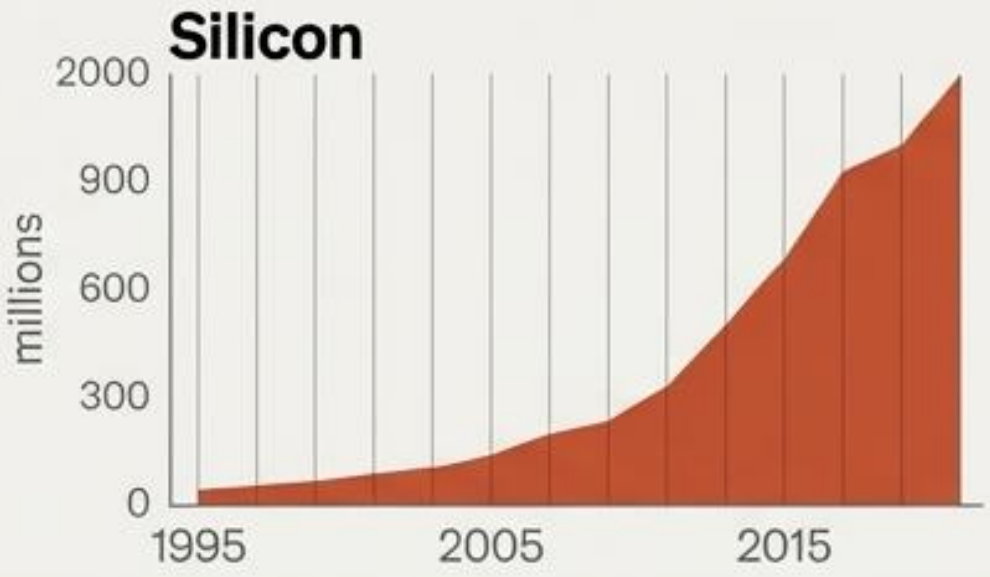
Average Mining Lead Time:

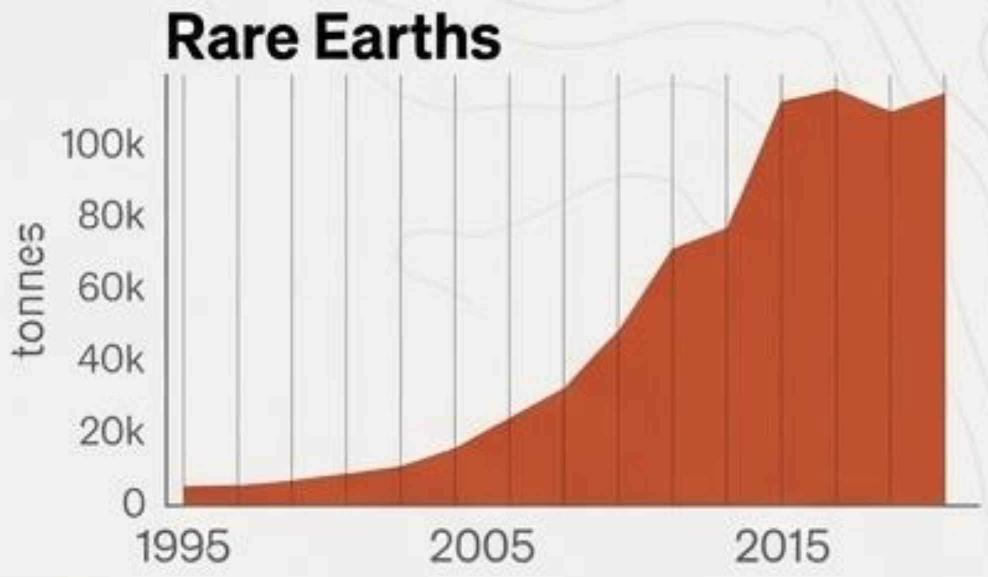
United States: 19 Years
Global Average: 15 Years



Beijing's Blueprint for the Downstream Hegemony







The Result: China now produces 75% of global batteries, 98% of LFP batteries, 80% of solar panels, and 92% of permanent magnets.

The Energy Engine

Massive, cheap domestic coal energy driving highly energy-intensive metallurgy.

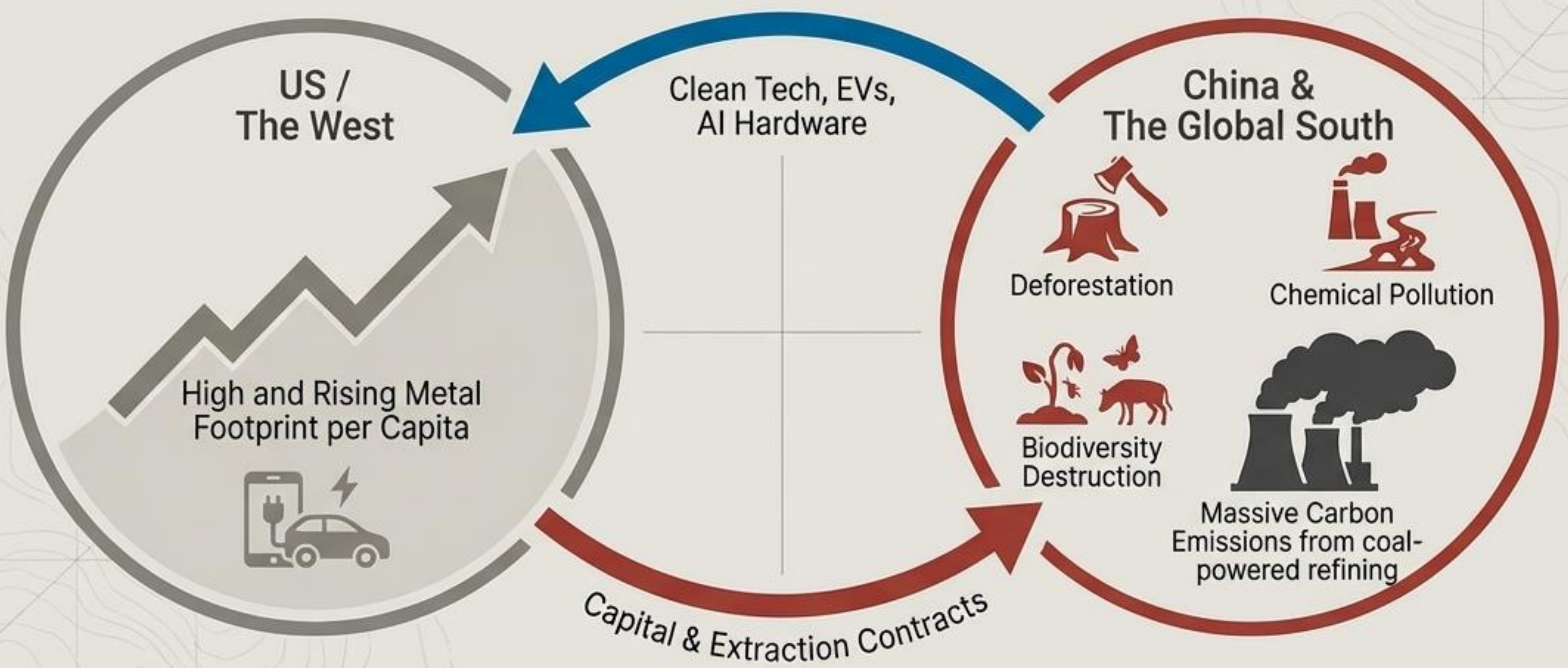
The Master Plan

'Made in China 2025' state subsidies shifting focus from raw export to downstream value capture.

The Global Dragnet

Massive Belt & Road Initiative FDI securing foreign mines: $25B in Australia, $12B in DRC, $11B in Peru.

The Machinery of Ecological Unequal Exchange

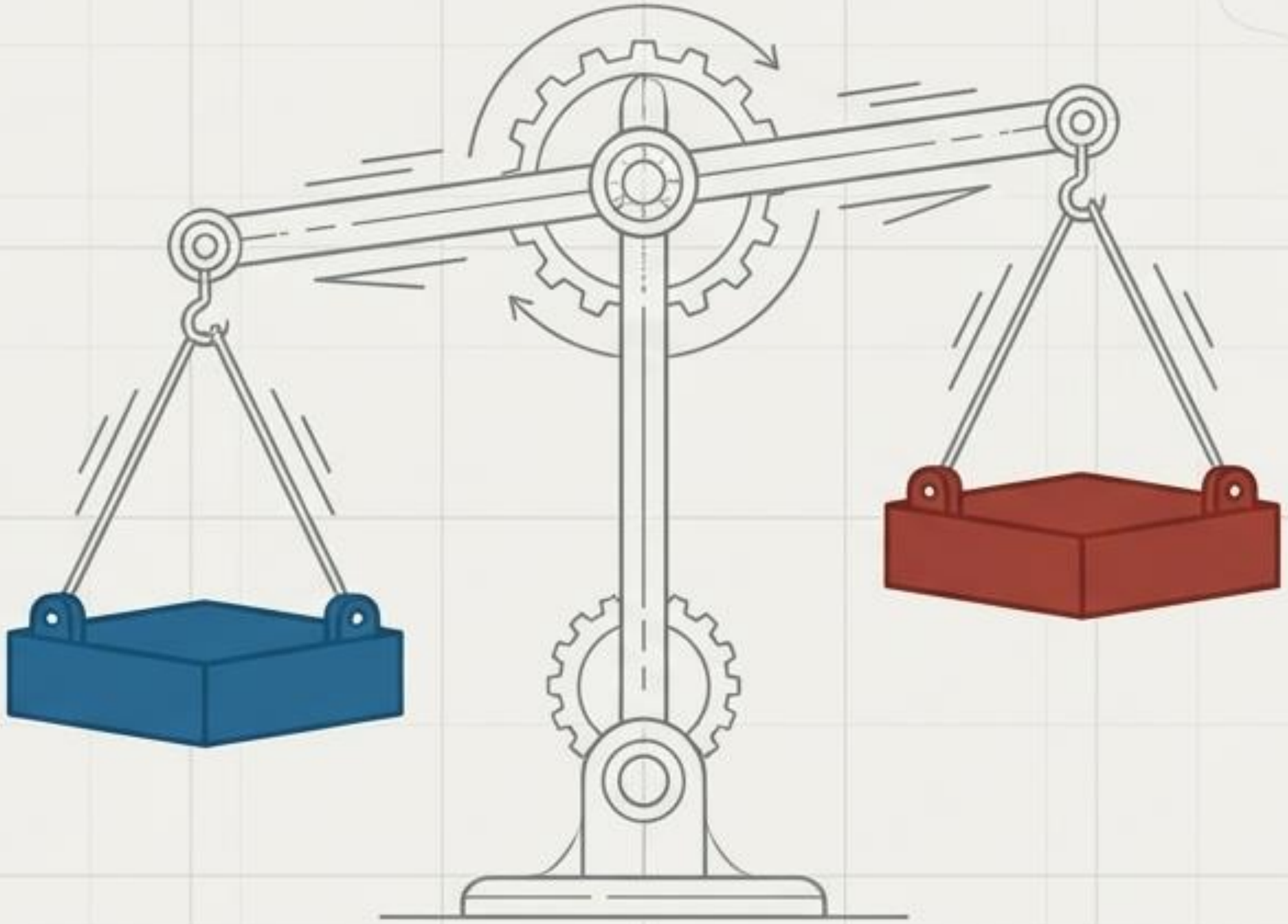


The West externalized the ecological and energetic costs of the green transition to China and the Global South, optimizing economically but creating catastrophic strategic vulnerabilities.

Mutually Assured Chokepoints

United States: The Intangible Upstream

- Microchip design
- Advanced software architectures
- Highly specialized manufacturing equipment



China: The Tangible Downstream

- Critical mineral extraction
- Massive refining and metallurgical capacity
- Finished component manufacturing (batteries, wafers)

The US weaponizes the intangible upstream (restricting chip tech); China weaponizes the tangible downstream (restricting raw materials). Both are using their respective monopolies to control global trade.

The Escalation of Export Controls

Oct 2022 (US)

Blanket restrictions on advanced microprocessors and chip-making machinery to China.

Jul 2023 (China)

Export licenses imposed on Gallium and Germanium.

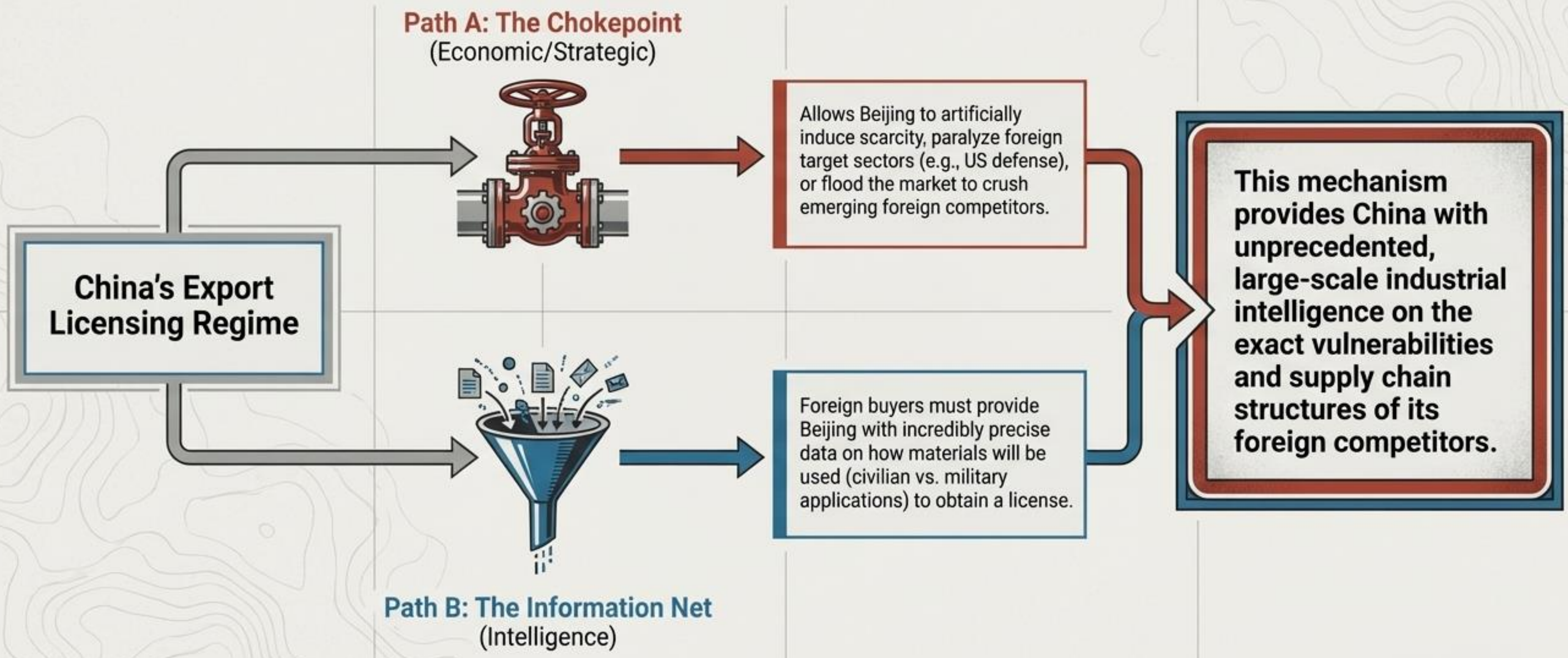
Dec 2024 (China)

Restrictions on Antimony (critical for defense/AI).

April 2025 (China)

Sweeping export licenses on Rare Earths (Samarium, Gadolinium, Terbium, etc.), permanent magnets, and the "Foreign Affiliates" rule extending extraterritorial reach.

The Hidden Architecture of Chinese Export Licenses



The United States Playbook: De-Risking and Friendshoring

Pillar 1

Massive Subsidies (Identify & Relocate)

$25 Billion

Committed in 2025 alone across 20 programs via the Inflation Reduction Act (IRA) and Infrastructure Investment and Jobs Act. A shift from free-market to state-subsidized industrial policy.

Pillar 2

Defense Mobilization (Secure)

$10 Billion

"Project Vault" — The DoD's strategic stockpile initiative. Includes the DARPA AI program for geological exploration and a $150M partnership with MP Materials.

Pillar 3

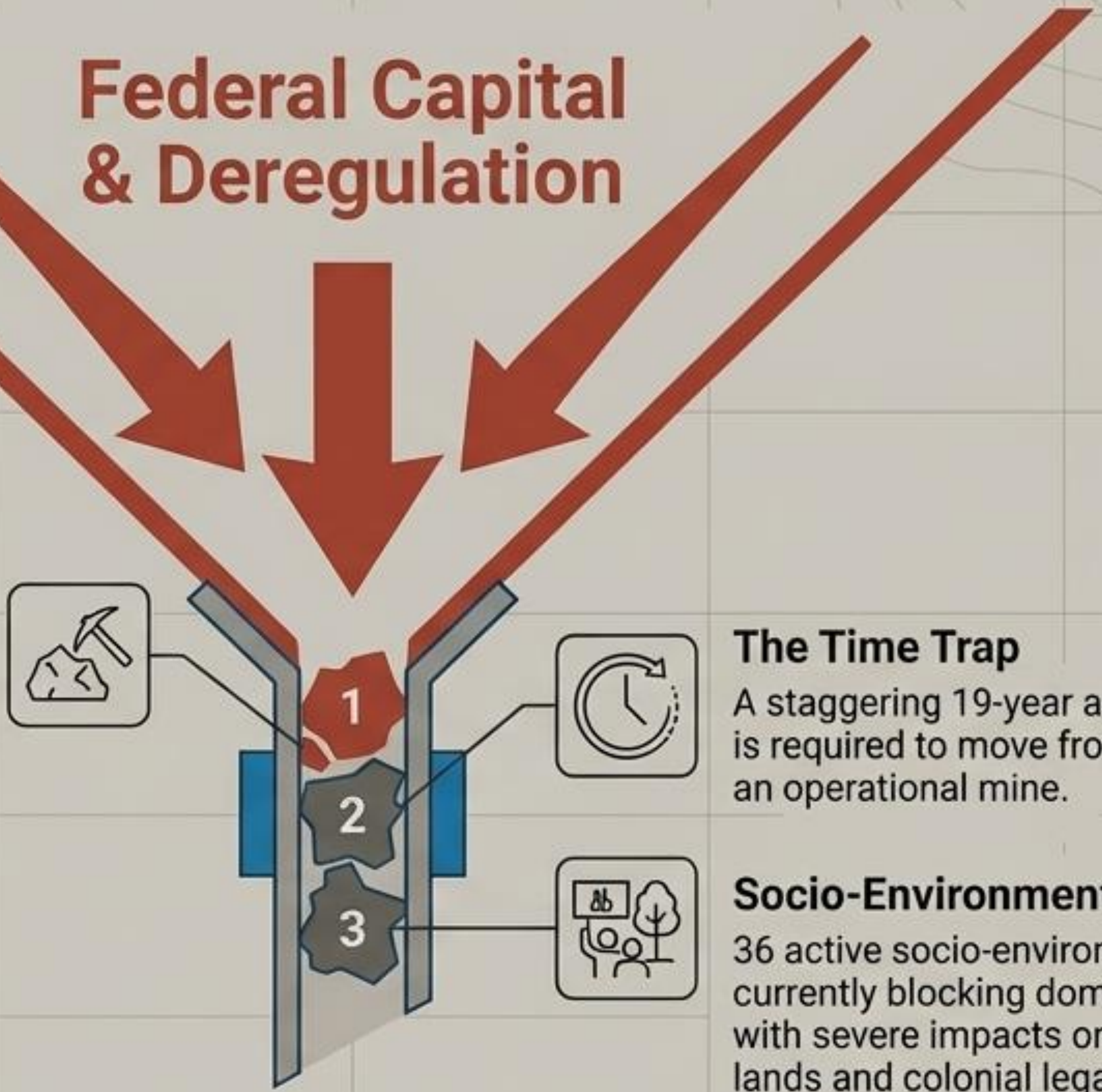
The "Friendshoring" Network

Bilateral agreements mapping new supply lines: Australia, DRC, Japan, Saudi Arabia, Greenland.

Multilateral frameworks: "Pax Silica" and the Minerals Security Partnership (MSP).

PREMIUM SLIDE

The 'Not In My Backyard' Paradox



Geological Limits

Even if fully exploited, US domestic reserves cannot cover total technological needs.

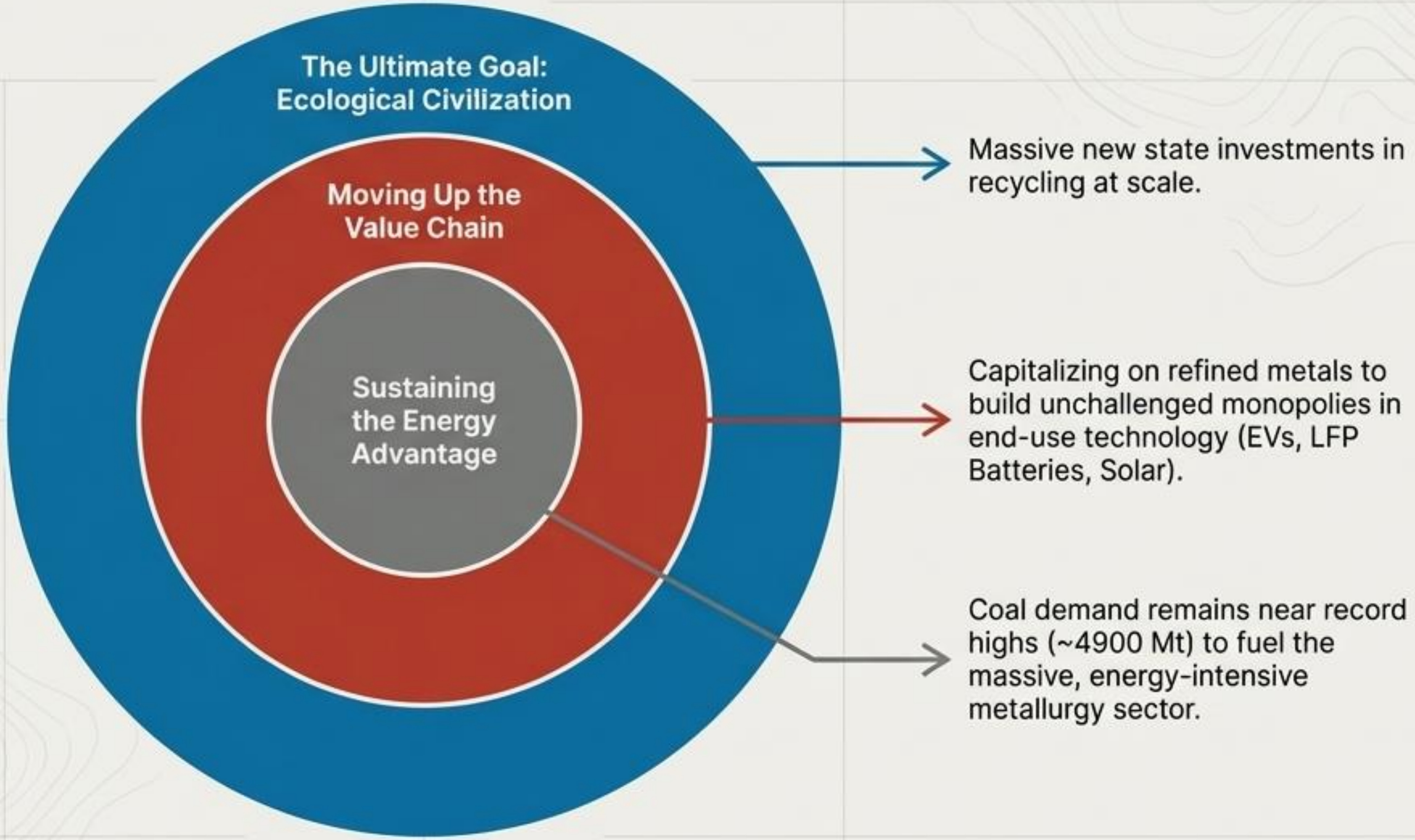
The Time Trap

A staggering 19-year average lead time is required to move from exploration to an operational mine.

Socio-Environmental Friction

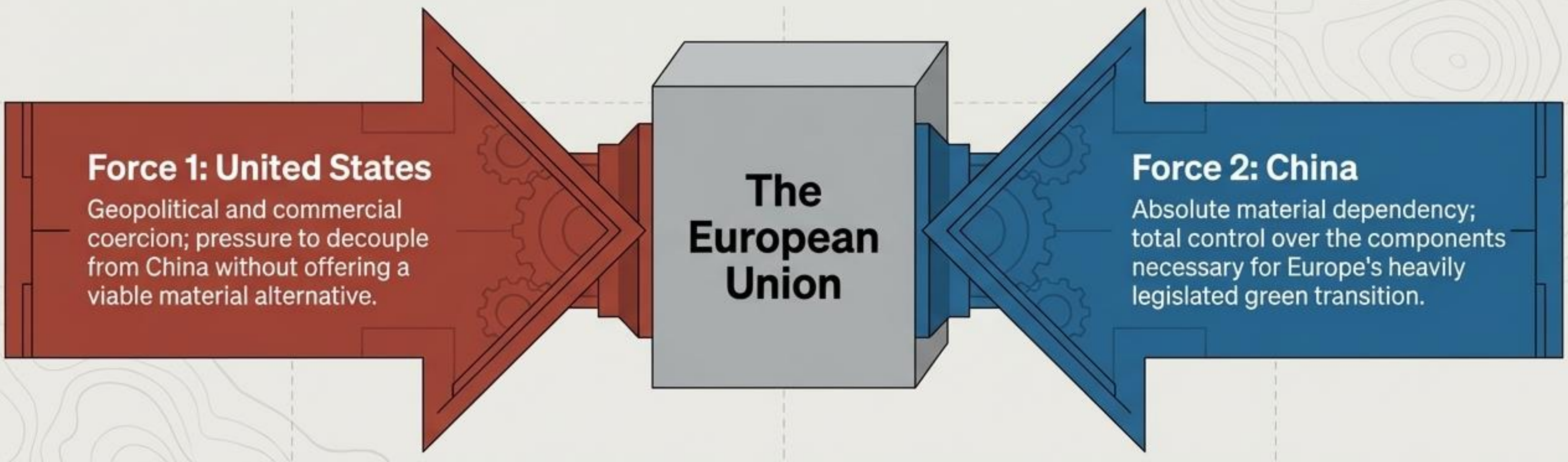
36 active socio-environmental conflicts currently blocking domestic extraction, with severe impacts on Native American lands and colonial legacies.

Beijing Consolidates the Fortress



China is shifting from simply digging up new dirt to dominating the secondary market of recycled materials, aiming to solve the problem of finite global resources before the West even establishes its primary supply chains.

The Squeeze: Europe Caught in the Middle



The European Response: Critical Raw Materials Act (CRMA)

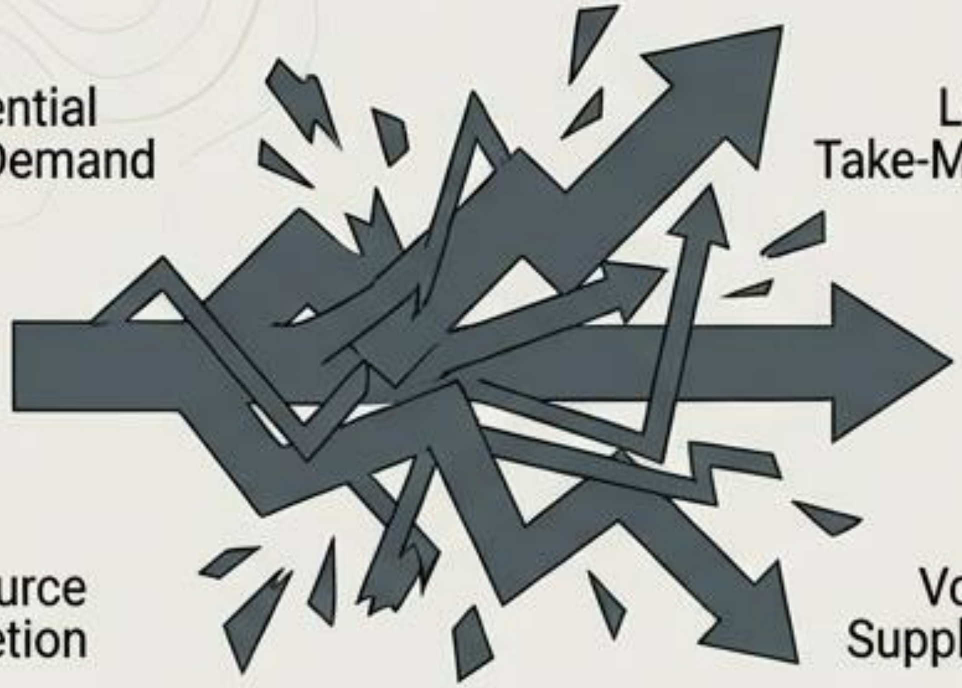
- Insufficient domestic geological reserves.
- Lack of multi-national mining giants (Zero EU companies in the global top 40).
- Fragmented capital markets across member states.
- Crippling industrial energy costs compared to the US and China.

The Strategic Triad: Diagnosing the State of Play

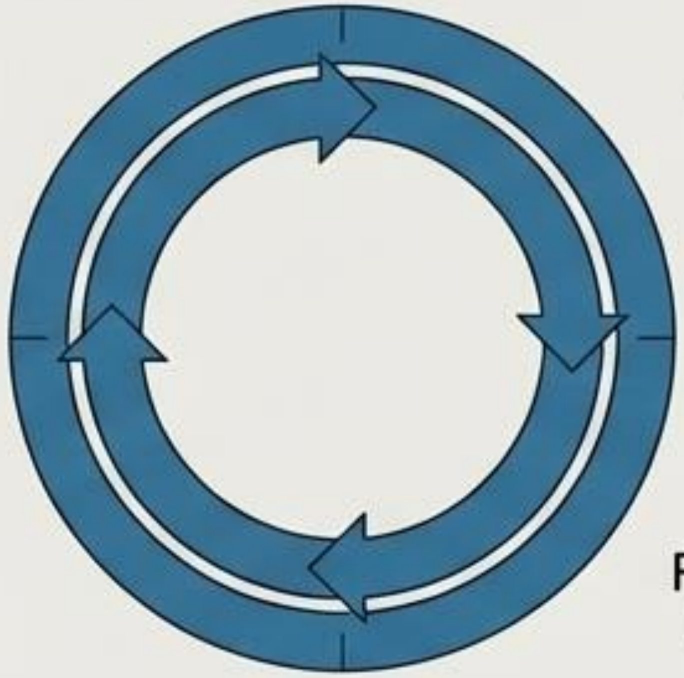
	United States	China	European Union
Supply Chain Stance	Intangible Upstream Dominance	Tangible Downstream Monopoly	Deep Double Dependency
Primary Strategy	State-Subsidized "Friendshoring" & De-risking	State Capitalism & Export Licensing	Regulation & Diversification (CRMA)
Structural Advantages	Deep capital markets, advanced R&D, military alliances	Cheap energy, centralized planning, massive refining capacity	High regulatory standards, wealthy consumer market
Fatal Vulnerabilities	19-year mining lead times & NIMBYism	Approaching ecological limits & foreign pushback	No domestic mining giants & high energy costs

The Third Way: Structural Sobriety

STATUS QUO: Relentless Accumulation



STRATEGIC SOBRIETY: Systemic Equilibrium



Since Europe cannot win a subsidy war with the US or a mining war with China, its only path to true sovereignty is abandoning the pursuit of endless material accumulation

Demand Reduction

Implement structural policies to radically reduce the total flux of materials and energy.

Embracing Low-Tech

Shift innovation away from purely high-tech, mineral-dense solutions toward sustainable, low-tech adaptations.

True Autonomy

Recognize that independence comes not from finding new places to mine, but from needing fewer mines in the first place.

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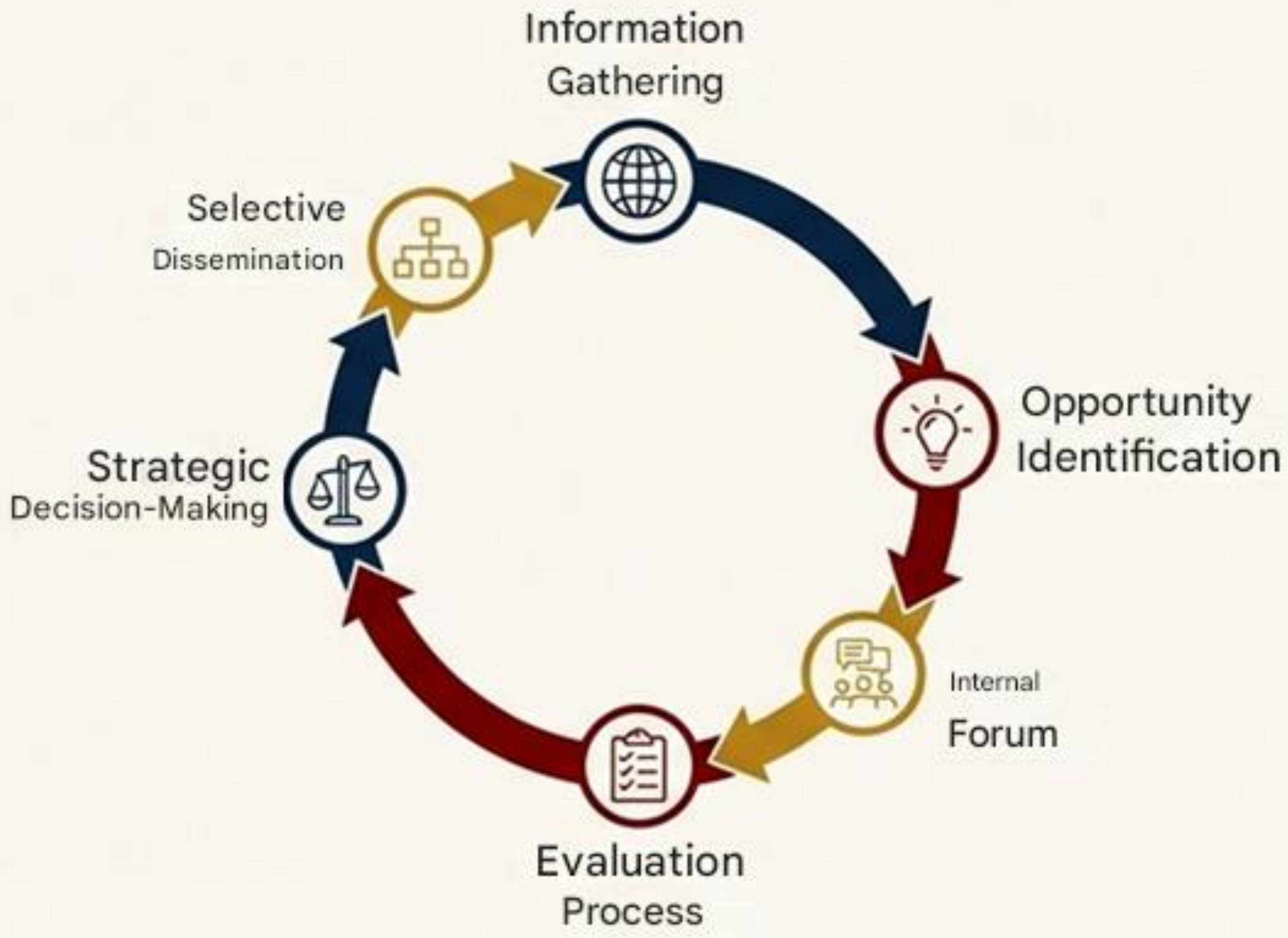
Proactive Economic Intelligence



FANDS-LLC is a proactive economic intelligence firm specializing in strategic analysis and technological solutions for critical sectors.

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VERSATILITY OF APPLICATION

The technology eliminates false positives by identifying the specific type of mineral.