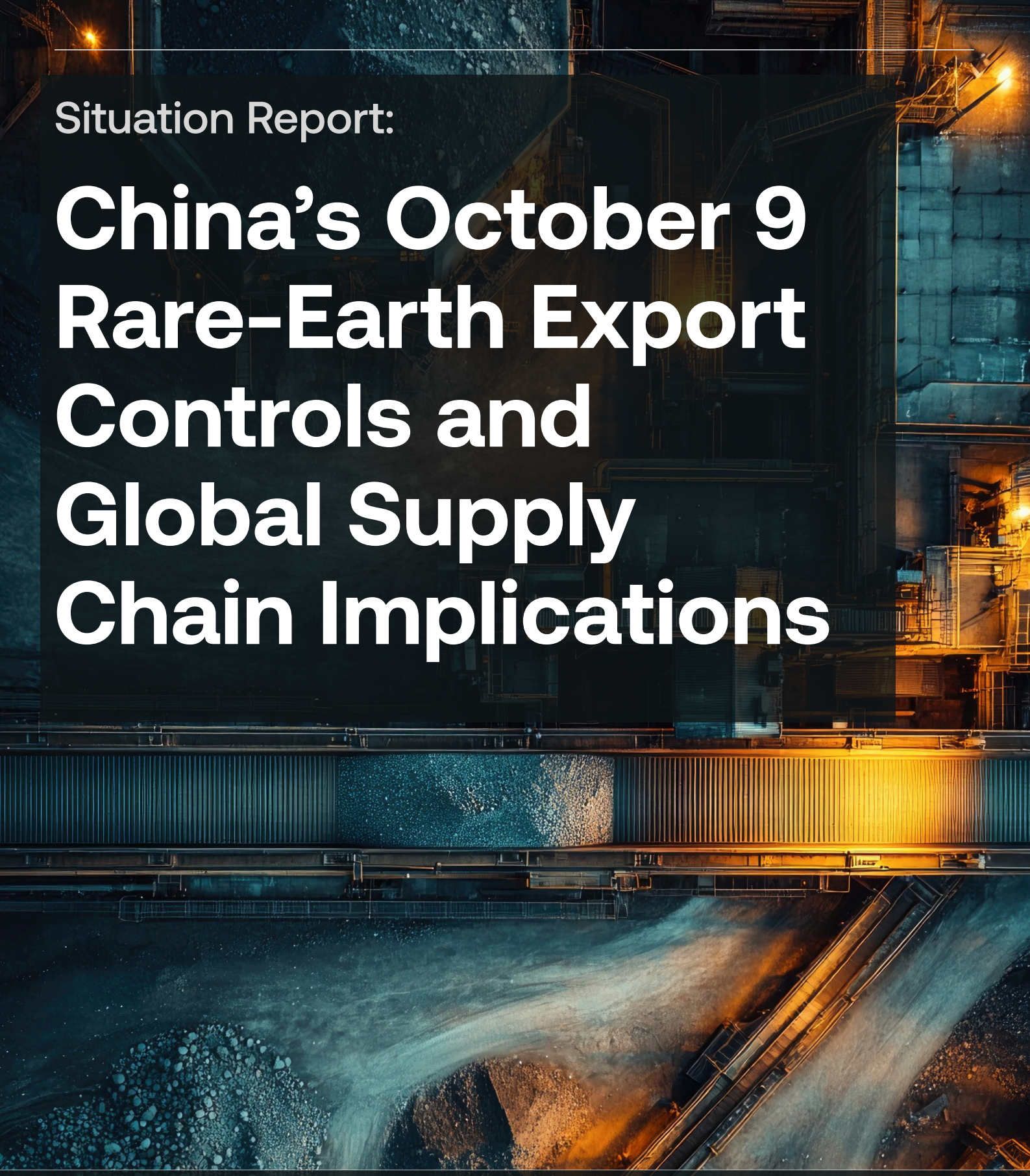
Situation Report:

China’s October 9 Rare-Earth Export Controls and Global Supply Chain Implications



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October 9, 2025

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Executive Summary

- **What changed on Oct 9, 2025: MOFCOM Notice 2025 No. 61** imposes **extraterritorial** controls. If your product **outside China** contains **Chinese-origin** rare earths (REEs) and that content is **≥0.1% of item value**, or if it was **made using** Chinese REE technologies (extraction, separation, metal smelting, magnet manufacturing, recycling), a **Chinese export permit** is required before you **re-export it**. Licenses for **military** uses are "not permitted in principle"; **advanced chips/AI** end uses face **case-by-case** review. **Parts 1(a)** & **1(b)** take effect **Dec 1, 2025**; **1(c)** is **effective immediately** (Oct 9).
- **Not new, but still binding: Announcement No. 18 (Apr 4, 2025)** already put **seven** REEs/derivatives (Sm, Gd, Tb, Dy, Lu, Sc, Y) under license control.
- **Likely expansion:** Chinese authorities have **signaled additions** (e.g., five more elements) and **technology controls** (Notice 62) that extend to **equipment and know-how** for mining/refining/magnets.
- **Why this matters:** China does **~87%** of **refining**; **magnets** are **~45%** of global REE demand. A broad extraterritorial rule + high concentration = **bottlenecks + price volatility** along EV/wind/defense/semiconductor chains.
- **Near-term market stress:** Heavy REE supply is also constrained by **Myanmar** (Kachin) disruptions; **Tb oxide** rose **+21.9%** to **6,550 yuan/kg** as imports from Myanmar dropped sharply

1. Overview

In 2025 China introduced a new extraterritorial control regime over rare-earth materials that **extends far beyond its traditional export bans.** On 9 October 2025, the Ministry of Commerce (MOFCOM) issued **Notice No. 61** (often paired with a technology-transfer Notice No. 62) that requires **any product containing ≥0.1% by value of Chinese-origin rare-earth elements or produced using Chinese rare-earth technologies** to obtain a Chinese export licence before it can be **re-exported anywhere in the world.**

The notice automatically denies licences for military or AI-related uses (e.g., chips at 14 nm and below, >256-layer memory devices or AI systems with military potential). It also lists specific heavy rare-earth elements (samarium, gadolinium, terbium, dysprosium, lutetium, scandium and yttrium) and their alloys, oxides and magnets in Appendix 1.

A Declaration of Compliance must accompany any shipment, confirming that downstream users are aware of the requirement to seek MOFCOM approval.

This extraterritorial reach is often described as China's **"foreign direct product rule"** moment because it mirrors Washington's semiconductor controls but inverts them; Beijing now claims veto power over the re-export of any product containing trace Chinese rare-earth content or made with Chinese refining or magnet-making technology.

The move follows a series of export restrictions on strategic minerals (gallium, germanium, antimony and graphite in 2023–24; tungsten, tellurium, bismuth and indium in early 2025) and sits within a broader "geoeconomic deterrence" strategy. By controlling roughly 70% of rare-earth mining, 87% of refining and over 90% of permanent-magnet manufacturing, China can influence supply chains critical to electric vehicles (EVs), wind turbines, defence systems and semiconductors.

The measure aims to remind Washington, Brussels and Tokyo that no green or digital transition works without Chinese minerals, and to retaliate against U.S. and allied controls on advanced chips.

The notice arrives on top of a restricted export regime introduced in **Announcement No. 18 (4 April 2025)**, which required export licences for samarium-, gadolinium-, terbium-, dysprosium-, lutetium-, scandium- and yttrium-related metals, oxides, alloys and magnet materials.

Commentators expect the 0.1% rule to be even more disruptive because it applies to products manufactured outside China that merely use Chinese-origin rare-earth materials or technology. The notice takes effect for products made in China on **9 October 2025** and for foreign-made products on **1 December 2025.**

To help executives understand the implications, this report analyses the history of China's rare-earth restrictions, the substance of Notice 61/62, the expected supply-chain and price impacts, and scenario outcomes. It draws on official translations, government data, industry analyses and current news reports to provide a fact-checked, strategy-oriented overview.

2. Historical context of China's rare-earth leverage

2.1 2010 maritime dispute and Japan embargo

China's first high-profile weaponisation of rare earths occurred in **September 2010** during a maritime dispute with Japan. Beijing reportedly halted exports of rare-earth elements to Japan, causing global prices to spike and supply to contract. Some later argued that the reduction was part of a broader export-quota cut of about 40%. Total exports fell 77% and prices quadrupled, but the incident demonstrated how quickly China could squeeze global supply.

2.2 Growing controls (2023 – early 2025)

Year/Month	Event (simplified timeline – image below illustrates key milestones)	Evidence
Dec 2023	Ban on rare-earth extraction & separation technology—China prohibited the export of extraction and separation technologies for rare-earth elements. In the same year, export controls were imposed on gallium and germanium (July 2023) and later antimony and graphite.	CSIS analysis notes that the December 2023 ban aimed to keep critical processing know-how within China.
April 4 2025 (Announcement 18)	China introduced export licence requirements for seven heavy rare-earth elements—samarium, gadolinium, terbium, dysprosium, lutetium, scandium and yttrium—and products like magnets and sputtering targets. The restrictions applied to all countries and slowed export licence approvals, causing exporters to report customs delays. Analysts warned that prices could double or increase 500% and recommended that companies explore alternative sources.	Holland & Knight, Reuters reports
Oct 9 2025 (Notice 61/62)	New rules impose extraterritorial control on any product containing ≥0.1% by value of Chinese-origin rare earths or produced using Chinese technology. Appendix 1 lists the same seven heavy rare-earth elements and magnet materials, and licences for military or AI-related uses (14 nm chips, 256-layer memory, military AI) will be automatically denied. Notice 62 separately requires licences for the export of rare-earth–related technologies and even intangible transfers such as consulting or joint research.	Official translation and Lexology analysis

3. Substance of MOFCOM Notice No. 61 (2025) and No. 62

3.1 Scope and coverage

Notice 61 imposes licensing requirements on three classes of items:

1. **Chinese-made products** containing rare-earth metals, alloys, oxides, permanent magnets or sputtering targets listed in Appendix 1.
2. **Foreign-made products** that contain **any** of the listed rare-earth materials produced in China when those materials constitute **≥ 0.1%** of the product's total value. In practice, this covers almost all permanent magnets and many electronic components because even trace heavy rare-earth dopants (e.g., dysprosium or terbium in neodymium–iron–boron magnets) exceed the value threshold.
3. **Items produced abroad** using Chinese rare-earth mining, smelting, magnet-making or recycling technology. Licences are denied for export to foreign militaries or dual-use activities and subject to case-by-case review for advanced chips and AI.

Exporters must provide a **Declaration of Compliance** summarising the origin and share of rare-earth content, certify that the product will not be used for military or prohibited purposes, and inform downstream users that they cannot re-export or transfer the product without license.

Notice 62 extends controls to **rare-earth-related technology transfers**, including intangible exports such as licensing, joint research or technical consulting, and imposes a catch-all clause for unlisted technologies with "important impact on national security".

3.2 Differences from earlier restrictions

- **Extraterritorial reach** – Unlike previous bans that targeted shipments leaving China, Notice 61 reaches into foreign production. Companies anywhere in the world must seek Chinese permission to re-export items if they contain or rely on Chinese rare-earth inputs or technology.
- **Value-based threshold (0.1%)** – The threshold, measured by value rather than weight, covers even trace amounts of heavy rare earths used as dopants in magnets or catalysts. For example, dysprosium often constitutes <3% of a neodymium-iron–boron magnet by weight but accounts for >10% of its value, ensuring the magnet falls under the rule.
- **Automatic denial for certain uses** – Licences are denied for military end-users and advanced chips (≤ 14 nm, 256-layer memory), a direct response to U.S. export controls on advanced semiconductors. Previous restrictions lacked such explicit targeting.

4. Current global supply-chain landscape

4.1 Production and processing concentration

- **Mine production** – China produced 240,000 t of rare-earth oxides (REO) in 2023, accounting for 68% of global output. The next largest producers were the United States (43,000 t, 12%) and Australia (18,000 t, 5%), with Myanmar (Burma) and Thailand contributing 11% and 2% respectively. China remains almost the sole producer of the heavy rare earths targeted by Notice 61, due to its control of ionic clay deposits and processing expertise.
- **Refining and separation** – Rare-earth ore must be separated into individual oxides and metals through complex solvent extraction. China refines ~87% of the world's rare-earth supply. Other regions have limited capacity; Europe supplies only 1.6% and North America 0.7% of refined rare earths.

- **Permanent-magnet manufacturing** – Permanent magnets (neodymium–iron–boron and samarium–cobalt) are the largest single use for rare earths, consuming 45% of demand in 2023. China produces over 90% of NdFeB magnets and nearly all heavy-rare-earth doped magnets.
- **Value chain vulnerability** – The International Energy Agency notes that the mining and refining of critical minerals remain highly concentrated; the top three mining countries accounted for 77% of rare-earth output in 2024, up from 73% in 2020, and the top three refining countries supplied 86% of refined output. Outside China, supply meets only half of projected 2035 demand, making supply chains highly vulnerable to shocks.

4.2 Existing supply shocks

Myanmar civil conflict (2024–2025)

Myanmar's Kachin state produces roughly **half of the world's heavy rare earths**. In October 2024, the Kachin Independence Army (KIA) seized the mining belt, throttling exports. Chinese imports of rare-earth oxides from Myanmar fell 89% between October and February. Spot prices of **terbium oxide** jumped **21.9% to 6,550 yuan/kg** between late September 2024 and 24 March 2025, while **dysprosium oxide** prices slipped 3.2% as demand softened. Adamas Intelligence warned that a prolonged shutdown would increase volatility and reshape market dynamics.

April 2025 export restrictions

Announcement 18 slowed export licence approvals, with some shipments detained at customs, creating uncertainty about what qualifies as a controlled item. The restrictions targeted heavy rare earths critical for heat-resistant magnets in aerospace and defence, causing concerns about supply shortages for EV motors, wind turbines and defence equipment. Analysts predicted prices for dysprosium and terbium could double or even rise by 500%.

5. Impacts of MOFCOM Notice 61/62 on industries and markets

5.1 Semiconductors and advanced electronics

The 0.1% rule covers **sputtering targets and magnetic materials** used in semiconductor equipment. Licences for chips at **14 nm and below, 256-layer memory devices** and **military-grade AI systems** will be denied. Even foreign-made chips may be covered if they utilise Chinese-origin rare earths or technology during manufacturing. This increases compliance complexity for foundries and packaging houses and could delay shipments to U.S., EU and Japanese customers. Semiconductor makers may need to redesign supply chains to avoid Chinese inputs or shift to friend-shored magnets and sputtering targets.

5.2 Electric vehicles and wind turbines

Permanent magnets using neodymium–iron–boron doped with dysprosium or terbium are essential for **EV traction motors** and **direct-drive wind turbines.** EV makers (Tesla, Ford, GM, BYD and Rivian) and turbine manufacturers (Vestas, Siemens Gamesa, Goldwind) rely on heavy rare earths to achieve thermal stability. Announcement 18 already slowed exports, and Notice 61 means foreign OEMs using Chinese magnets must now apply for Chinese licences when re-exporting vehicles or turbines. Any denial could disrupt assembly lines or delay shipments. The **International Energy Agency** warns that supply shocks could raise battery pack prices by **40–50%** and that high market concentration makes supply chains vulnerable.

5.3 Defence and aerospace

Dysprosium and terbium provide high-temperature performance for jet engines, guided missiles and other defence equipment. The CSIS notes that Notice 61 will **"automatically deny licences"** for foreign military end-users. U.S. defence primes (Lockheed Martin, Raytheon, Northrop Grumman) and allied militaries thus risk supply interruptions. Since heavy rare earths are often embedded in magnets inside weapons systems, verifying supply chain compliance could become a major bottleneck. Allies may have to stockpile magnets or seek alternative suppliers (e.g., MP Materials' Mountain Pass mine, Lynas' Mt Weld, or Japanese magnet producers) but these sources currently cannot meet global demand.

5.4 Consumer electronics and ICT

Smartphones, computers and data centres depend on neodymium magnets and gadolinium for disc drives, speakers and sensors. Because magnets are often factory-installed in China, foreign brands risk being swept into the 0.1% rule when exporting finished products to third countries. Without clarity on enforcement, shipments may be delayed at customs pending licence verification, increasing inventory risk.

5.5 Industrial and medical uses

Rare-earth catalysts are vital for petroleum refining and pollution-control systems; europium and yttrium are used in phosphors and lasers; scandium is alloyed with aluminium for aerospace structures. The direct impact of Notice 61 on these markets is uncertain because the 0.1% rule is value-based and may not apply to bulk commodities with low rare-earth value share. However, uncertainty around compliance could discourage suppliers from using Chinese refining technology, pushing them to invest in alternative processes or recycled materials.

Sector	Exposure hotspots	Lead-time risk
EVs	**NdFeB motors** (NdPr with **Dy/Tb** in high-temp variants); **SmCo** in some e-axles	**High** if Dy/Tb content >0; license queues can stretch **2–3 months**; port holds reported earlier this year.
Wind	**Generator magnets** (NdPr; Dy/Tb for offshore high-temp)	**Medium–High**
Defense/Aero	**High-temp magnets**, guidance, actuators; **sputtering targets**	**High** (end-use sensitivity)
Semiconductors	**Sputtering targets** (Tb/Dy/Gd/Y/Sc/Lu/Sm); Notice 61 flags **14 nm / 256-layer / AI** as **case-by-case**	**High** (licensing scrutiny)_
Consumer electronics	Mini motors, speakers, sensors (NdFeB)	**Medium**

6. Price and market outlook

6.1 Recent price trends

- **Heavy rare earths** – Terbium oxide prices surged 21.9% to **6,550 yuan/kg** (≈$900/kg) during the Kachin conflict and are expected to remain volatile due to supply disruptions and China's licensing regime. Dysprosium oxide prices dipped slightly but remain elevated (~1,665 yuan/kg). USGS price data show that terbium oxide averaged **$810/kg in 2024,** down from $2,051/kg in 2022, illustrating how quickly prices can move when supply shocks occur.
- **NdPr and magnet materials** – Neodymium oxide averaged **$56/kg** in 2024. Analysts predict that the 0.1% rule could raise NdPr magnet prices by 15% or more by mid-2026 due to licensing delays and supply segmentation. The CTOL analysis assigns a **65% probability** that dysprosium and terbium prices will experience >15% volatility by March 202.
- **Other minerals** – Prices for cerium, lanthanum and other light rare earths remain low due to oversupply; cerium oxide averaged ~$1/kg in 2024. However, the 0.1% rule may have limited impact on light rare-earth prices because their value share in magnets is small.

6.2 Supply-chain responses and market segmentation

1. **Friend-shoring and diversification** – The U.S., EU and Japan have been expanding domestic mining and processing. Lynas' Malaysian plant produced dysprosium in 2025, marking a milestone in localisationamazingmagnets.com. MP Materials is building U.S. processing capacity and has halted exports of raw rare earths to China, aiming to resume downstream manufacturing domesticallyamazingmagnets.com. Europe and Korea are investing in magnet manufacturing, while Australia, Canada and Vietnam are exploring new mines. The International Energy Agency notes that while some diversification is emerging, the top three refining nations are still projected to supply 82% of refined rare earths in 2035, meaning supply concentration will remain high.
2. **Recycling and substitution** – Companies are investing in rare-earth recycling and magnet-free drive technologies. Some motor manufacturers are researching induction or switched reluctance motors to reduce reliance on magnetsamazingmagnets.com. Novel separation technologies (e.g., ionic-clay extraction and process intensification) may reduce capital costs, opening opportunities in Australia, Brazil and Uganda, though these projects are at an early stage.
3. **Supply agreements and stockpiling** – Downstream firms are negotiating long-term offtake contracts with non-Chinese miners and stockpiling magnets. Government stockpiles of dysprosium and neodymium magnet blocks are being built in the U.S., and the EU has proposed a **Critical Raw Materials Act** to secure supply. Analysts expect Western governments to roll out subsidies (> $500 million) for domestic magnet and recycling facilities by mid-2026.
4. **Market segmentation** – Notice 61 may force a **bifurcation into "China-inside" and "China-free" supply chains.** Chinese producers could supply BRICS+ partners with preferential access, while Western firms rely on friend-shored supply. CTOL analysis predicts a 50% chance that China will expand the control list within 12 months, suggesting the two systems may diverge further. Companies might need to design separate product versions for markets requiring Chinese content and those that avoid it.

6.3 Scenario analysis

Scenario	Description	Probability (subjective)	Expected effects
Base case: stringent but manageable licensing (60% probability)	MOFCOM grants licences for non-sensitive uses but imposes long review times. Delays cause **10–20% price increases** for heavy rare earths and magnets, but supply continues to flow for EVs and wind turbines. Companies establish compliance teams and pass costs to customers.	60%	Moderate price increases, supply delays, accelerated friend-shoring and substitution. Companies maintain dual supply chains.
Escalation: denial of licences and broadening control list (25% probability)	China denies licences for broader categories (e.g., data-centre magnets) and adds more rare earths (holmium, erbium, thulium, europium, ytterbium) as indicated by Reuters. Supply shortages cause **>30% price spikes**, prompting Western governments to subsidise domestic magnet factories and file WTO complaints (55% probability).	25%	Severe shortages for defence and EV sectors; accelerated investment in recycling and alternative technologies; possible black market for magnets.
De-escalation: negotiated trade compromise (15% probability)	In exchange for relief on advanced chip controls, China relaxes rare-earth licensing for non-military uses. Prices stabilise and supply disruptions ease.	15%	Reduced price volatility; limited impetus for friend-shoring; supply chains remain global but still fragile.

Conclusion

China's **Notice No. 61** represents a **step-change** in the geopolitics of rare earths. By extending export controls to products manufactured abroad and establishing a low value threshold, Beijing has gained leverage over supply chains critical to EVs, wind turbines, semiconductors and defence. The move responds to U.S. semiconductor controls and signals that rare earths are now strategic weapons in a techno-economic contest.

With China dominating mining, refining and magnet production, any disruption or policy shift can reverberate through global industries. Early export restrictions in April 2025 and the Myanmar supply shock have already caused price volatility; Notice 61 is likely to prolong this uncertainty and may catalyse a bifurcated world in which companies choose between "China-inside" and "China-free" supply chain

For executives, the imperative is clear: **build resilience and flexibility**. This means mapping exposure, diversifying sources, investing in recycling and substitution, and engaging with policymakers. Scenario analysis suggests that while a negotiated de-escalation is possible, firms should prepare for prolonged licensing delays and potential further escalation. Only through proactive strategies can industries navigate this new era of geo-economic deterrence.