02 — Where scarcity can become a return

A bottleneck becomes economically valuable only when the supplier can monetise it at an adequate return on invested capital.

OHR Investment Intelligence

COMPARATIVE FRAMEWORK | OHR QUALITATIVE ASSESSMENT, NOT A MARGIN FORECAST

ECONOMIC ATTRIBUTE	UPSTREAM MINING	PROCESSING / SEPARATION	MAGNET PRODUCTION	SPECIALISED COMPONENTS
Scarcity	Commercial feedstock and favourable ore chemistry; not geological presence alone.	Reliable recovery of individual oxides, especially difficult element separations.	Qualified grades, repeatable yields and dependable non-China supply.	Application-specific performance and integration; not every motor is scarce.
Barriers to entry	Permits, capital, resource quality, recovery and mine infrastructure.	Process know-how, feed flexibility, environmental permits and operating stability.	Metallurgy, equipment, process control, scale and customer validation.	Engineering, reliability, systems integration and installed customer relationships.
China concentration	60% of magnet-REE mining in 2024; ore geography is more diverse. [1]	91% of magnet-REE refined output in 2024. [1]	94% of sintered magnets in 2024; Japan is a key alternative. [1, 13]	Varies by product; global assembly can still rely on China-linked inputs.
Qualification burden	Feed must fit the buyer's flowsheet; impurity and recovery tests matter.	Consistent purity and traceability at the customer's required scale.	Magnetic / thermal properties, coatings, reliability and OEM approval.	System-level validation, duty cycle, safety and life testing by application.
Pricing power	Usually price-taking. Low cost and contracts matter more than scarcity rhetoric.	Potential security-of-supply premium; retained spread depends on feed costs and terms.	Potential qualified-supply premium; OEM negotiation and raw-material pass-through limit it.	Potential design-in advantage; realised value depends on differentiation and contracts.
Substitution / downside	New supply, recycling, lower intensity and weak commodity prices.	New routes, recycling and competing capacity; low utilisation can destroy returns.	Heavy-REE reduction, ferrite or motor redesign; qualification delays and scrap.	Redesign, insourcing and rival architectures; shortages can stop customer output.
Listed research routes	MP and Lynas span mining and processing; neither is solely an ore exposure.	Lynas; MP; Neo; Energy Fuels, with different assets and maturity.	Neo; Shin-Etsu; TDK; MP ramp. VAC remains a proposed Energy Fuels acquisition.	MinebeaMitsumi; downstream Vestas. Exposure can be a cost risk, not scarcity rent.

THREE TESTS BEFORE CALLING IT ECONOMIC CAPTURE

01 CONTROL

Can the company deliver approved output at scale, with secure feedstock and repeatable yield?

02 RETENTION

Do contracts preserve a conversion margin or supply premium after input inflation and customer bargaining?

03 CASH RETURN

Does that margin survive ramp costs, maintenance, expansion capital and working-capital needs?

Substitution is already real: TDK offers heavy-rare-earth-free Nd magnets; BMW documents current-excited motors without rare-earth metals. Neither proves universal replacement across all applications. [8, 11]

[1] IEA | Rare Earth Elements, 2026; 2024 supply data
[8] TDK | Magnet portfolio and heavy-rare-earth reduction
[11] BMW | Rare-earth-free motor design, 2024
[13] IEA | Rare Earth Elements: full report, 2026

Company routes: official sources [2–10, 14] on page 3. Framework and capture conditions are Ohr analysis; no valuation or buy ranking is implied.

01 — Critical Materials & Permanent Magnets

Where Supply-Chain Scarcity Can Create Economic Capture

The strategic constraint is the ability to deliver usable, qualified material. Resource ownership alone does not establish pricing power.

CHINA SHARE OF GLOBAL OUTPUT | 2024 STRUCTURAL BENCHMARK [1]

60% Magnet rare-earth mining

91% Magnet rare-earth refining

94% Sintered permanent magnets

Concentration increases after extraction.

Mining/refining figures cover Nd, Pr, Dy and Tb; the magnet series is sintered magnets. These are historical shares, not 2026 estimates.

FROM RESOURCE TO QUALIFIED MOTION | SIMPLIFIED NdFeB CHAIN [1, 3, 7, 8, 9, 10, 13]

01 RAW MATERIAL	02 SEPARATION / REFINING	03 METAL / ALLOY	04 PERMANENT MAGNET	05 COMPONENTS / MOTORS	06 END MARKETS
Ore / concentrate	**Individual oxides**	**Oxide to metal to alloy**	**Powder to finished magnet**	**Rotors, motors, actuators**	**Transport / industry / energy**
China; Australia; US; Myanmar	China dominates; Malaysia is a key alternative	China-led ecosystem; capacity in Japan, Korea and the West	China dominates; Japan is the main established alternative	Global manufacturing networks	Global demand
Economic grade, recovery and a saleable element mix. A deposit is not separated product.	Feedstock-specific chemistry, impurity control and residue management constrain scale.	Metallisation, composition control and repeatable alloy quality bridge a critical gap.	Sintering, thermal performance, coatings and customer approval define usable supply.	Integration and reliability matter. A qualified magnet does not qualify the whole system.	EVs, wind, automation, aerospace and defence. Magnet intensity varies by design.

WHAT IS ACTUALLY SCARCE?

NdPr supplies the core magnetic material. Dy/Tb can improve high-temperature performance, but some grades reduce or eliminate them. “Rare earths” are not one interchangeable commodity. [1, 8]

WHERE THE CHAIN CAN BREAK

A new mine still needs a compatible separator, metal conversion, magnet production and customer acceptance. Missing one link can strand the capacity added elsewhere. [13]

WHY SCARCITY MAY NOT PAY

Export restrictions can lift regional prices and disrupt users. The investable question is who retains the premium after higher costs, contracts, capital expenditure and working capital. [12; Ohr analysis]

Commodity exposure ≠ bottleneck ownership ≠ economic capture

[1] IEA | Rare Earth Elements, 2026; 2024 supply data
[3] Lynas | US markets: operations and products
[7] Shin-Etsu | Neodymium magnet product specification
[8] TDK | Magnet portfolio and heavy-rare-earth reduction
[9] MinebeaMitsumi | Brushless motors: Nd / ferrite variants
[10] Vestas | Materials and rare earths
[12] IEA | Supply concentration and 2025 disruption
[13] IEA | Rare Earth Elements: full report, 2026