



Why Europe's Critical Minerals & Rare Earths Sector Will Continue to Grow (2025–2035)

Implications for Supply, Industry, and Strategic Autonomy

1. Introduction

Europe stands at a pivotal moment. The combination of geopolitical pressure, technological acceleration, and industrial transformation has pushed **critical minerals and rare earth elements (REEs)** to the center of the EU's economic and security strategy. From defense to semiconductors, green energy, and photonics, European industries are now competing globally for reliable, compliant, and rapid access to high-purity materials.

Despite new legislation like the **EU Critical Raw Materials Act (CRMA)**, the structural shortage of refined critical minerals—and the urgent demand from industry—means the European market will continue to grow strongly over the next decade.

EUS (EuStrategix Critical Metals) specializes in this unmet segment: high-purity, small-lot, REACH-compliant oxides delivered rapidly from within Europe.

This white paper explains why the sector is set for sustained expansion and why Europe remains one of the most important markets in the world for critical minerals.

2. The Demand Drivers: Why Europe Cannot Slow Down

2.1. Green Transition & Electrification

Europe's energy, climate, and mobility policies are fundamentally reshaping demand for critical minerals.

- Electric vehicles require **Ta, Nb, Nd, Dy, Tb, Li, Co, Ni**
- Offshore and onshore wind turbines use **high-performance magnets (NdFeB)**
- Hydrogen systems require **catalysts and specialty metals**
- Grid storage systems require **advanced oxides and materials engineering**

EU climate policy ensures long-term structural demand for critical minerals through **2030, 2040, and beyond**. Supply cannot keep up with regulatory pressure.

2.2. Defense & Security Imperatives

Europe is re-arming at the fastest rate in 40 years. Defense sectors require:

- Laser optics (Ta_2O_5)
- Microwave components and RF ceramics (Nb_2O_5)
- Photonics for targeting, sensors, and countermeasures
- Advanced alloys and coatings
- High-temperature ceramics

With defense budgets rising across Spain, Germany, France, Poland, and the Nordics, demand for small-lot, high-purity oxides is accelerating.

2.3. Semiconductors, Photonics & Advanced Manufacturing

Europe's strategic industries depend heavily on Ta, Nb, and REEs:

- EUV/DUV optics
- Photonics research
- Quantum computing
- Additive manufacturing
- Specialized ceramics
- Laser systems
- Superconductors
- Thin-film production

These sectors constantly require **grams to kilos** of very high-purity materials—EUS's core market.

3. The Supply Reality: Europe Still Imports 85–100% of CRMs

For most critical minerals, Europe remains dependent on:

- **China** (processing and refining)
- **Brazil** (niobium)
- **USA & Australia** (REEs, tantalum, specialty oxides)
- **South Africa & Rwanda** (tantalum sources)

Even with CRMA incentives, Europe will not build enough refining capacity to match demand for at least **10–15 years**.

3.1. Bottlenecks that will not disappear soon

- Refining capacity remains concentrated outside Europe
- REACH compliance slows imports
- Logistics disruptions increase delivery times
- Geopolitical risk is rising
- Production of high-purity (<3 μm , 4N/5N) oxides is limited globally
- Industrial buyers need **urgent** JIT supply, not 8–12 week lead times

This structural gap fuels demand for agile European distributors with inventory inside the EU.

4. CRMA: A Step Forward, But Not a Solution

The **EU Critical Raw Materials Act** aims to:

- Increase domestic processing
- Secure strategic partnerships
- Reduce dependence on China
- Strengthen EU supply chains
- Support recycling and circularity

However, even the European Commission acknowledges:

“Europe will continue to rely heavily on imported critical minerals for the foreseeable future.”

The Act solves *long-term* issues, but not the **immediate operational reality** of R&D labs, manufacturers, defense integrators, and SMEs that need compliant materials **now**, in small lots.

EUS fills this gap by providing:

- Inventory in Europe
- Urgent delivery
- REACH-compliant documentation
- Small-lot quantities
- Technical support
- Full traceability

5. Market Forecast: Continued Strong Growth (2025–2035)

5.1. Tantalum (Ta) Market

Driven by:

- RF systems
- High-performance capacitors
- Thin-film optics
- Defense and aerospace
- Photonics

Expected EU growth: 6–12% annually.

5.2. Niobium (Nb) Market

Growth driven by:

- Ceramics
- Alloys
- Additive manufacturing
- High-dielectric materials
- Electronic substrates

Expected EU growth: 8–15% annually.

5.3. Rare Earth Oxides (Nd₂O₃, Dy₂O₃, Tb₄O₇, etc.)

Driven by:

- Motors
- Magnets
- Electronics
- Lasers
- Quantum optics

Expected EU growth: 10–18% annually.

These figures reflect structural, irreversible industrial evolution—not temporary cycles.

6. Conclusion

Europe’s demand for critical minerals and rare earth elements will continue to grow for at least the next decade due to structural forces:

- The green transition
- Re-industrialization
- Defense expansion
- Semiconductor and photonics advancements
- Supply chain security requirements
- CRMA-driven internal production
- Growing R&D ecosystems

At the same time, European supply will remain limited, and dependence on external markets will continue.

This widening gap creates a long-term opportunity for agile, compliant, Europe-based suppliers like **EUS**.

EUS is positioned as a cornerstone in helping European research centers, advanced manufacturers, and defense organizations secure the materials they need—**reliably, quickly, and with full compliance**.

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