Rare earths are scarce, strategic and soaring

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Key Takeaways

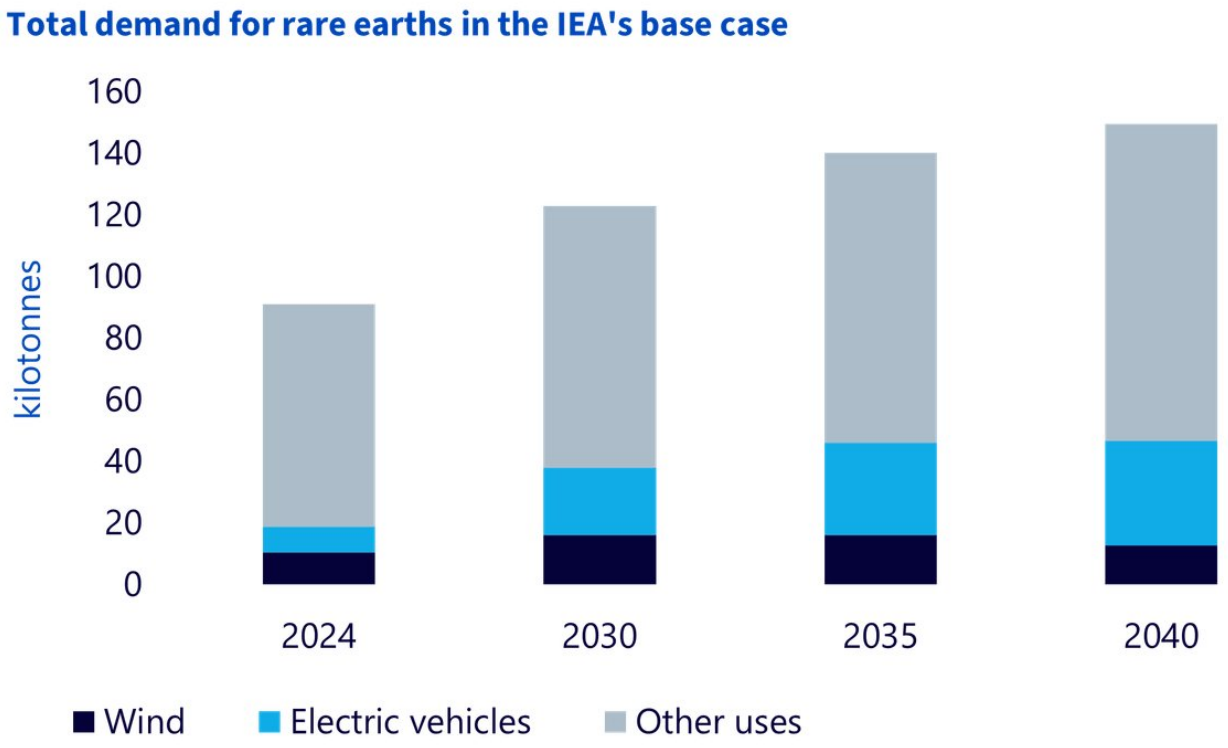
- Demand for rare earths is accelerating across energy, technology, and defence
- Supply is tight, highly concentrated, and structurally constrained
- These dynamics are putting rare earths firmly on investors' radar

Do you have your smartphone nearby? Perhaps you're reading this on one. Hold it in your hand. You now have, clasped within your fingers, among many other chemicals, most, if not all, of the 17 rare earth elements[1]. Smartphones, often considered urban rare earth mines, are not alone in packing this strategically important group of metals. Rare earths are all around us. The world needs more of them, and supply is unlikely to be enough based on current forecasts.

This blog outlines the International Energy Agency's (IEA) demand and supply projections for rare earths and explains why investors are so excited about the prospects for this group of commodities.

Demand for rare earths is expected to rise

The International Energy Agency's Stated Policies Scenario, in other words, its base case, which projects the future based on currently stated policies globally, forecasts a notable increase in demand for rare earths.



Source: International Energy Agency (IEA), May 2025. **Forecasts are not an indicator of future performance, and any investments are subject to risks and uncertainties.**

We can make three key observations from the graph. First, wind is shown as a separate segment. In wind energy, rare earths such as neodymium, praseodymium, dysprosium and terbium are used to make high-strength permanent magnets. The use of these magnets increases the efficiency of wind turbines. In other words, by sprinkling them into the mix, wind turbines are able to generate more electricity from a given amount of wind[2].

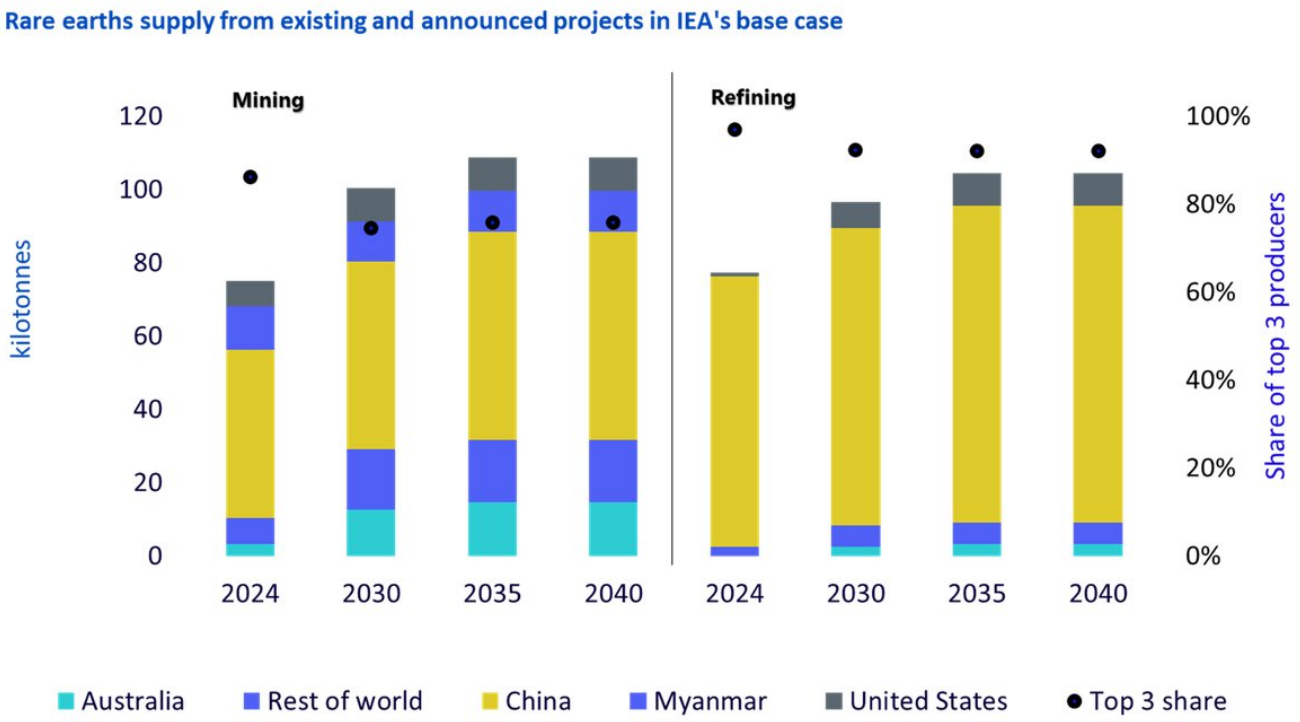
Second, electric vehicles (EVs) are also shown as a separate segment. EVs rely on rare earths like neodymium, dysprosium, praseodymium, and terbium to increase the efficiency of electric motors, giving vehicles the ability to reach higher speeds and drive longer distances on a single charge[3].

Third, there is an ‘other’ category which is, quite clearly, significant. In clean energy, rare earths are used in solar power, battery storage systems, and hydrogen production. Beyond energy, they are also used in consumer electronics such as screens and headphones, defence and aerospace systems like radar and jet engines, industrial applications including data centres and robotics, and medical applications such as MRI machines, to name a few examples.

Rare earths, therefore, play a crucial role across both the energy sector and the digital economy.

Supply is expected to be tight and concentrated

The International Energy Agency's base case on supply makes the analysis of market dynamics even more revealing.



Source: International Energy Agency, May 2025. **Forecasts are not an indicator of future performance, and any investments are subject to risks and uncertainties.**

From the chart, we can make three key observations. First, supply is expected to consistently fall short of demand. This remains the case through to 2040. In the world of commodities, this is ultimately the most important dynamic to pay attention to.

Second, supply is extremely concentrated. Notice the share of the top three producing countries, both in terms of mining and refining. This is not because these are the only countries with known deposits of rare earths. Rather, it is because they are among the few where production is currently taking place. Like many other strategic metals, rising demand is likely to incentivise more mining and refining activity around the world.

Third, the dominance of China, which is already evident across many industrial metals, is especially pronounced in rare earths. China dominates mining and almost entirely accounts for refining. Despite countries such as the US and others ramping up efforts to build their own supply chains, China's share is expected to remain dominant. This means that if any link in the current supply chain were to break, tightness could quickly become acute.

Overall, supply is tight and concentrated, creating a very attractive opportunity for increased mining and refining activity in this sector.

Closing word

Rare earths are often termed the vitamins of modern society. This is because many industries rely on them in small but essential quantities. They possess unique magnetic, luminescent and electrochemical properties that are difficult to replicate, making them hard to substitute.

They enable better performance, efficiency and miniaturisation across numerous applications, and given their role in strategic areas such as defence and AI, their importance is rising rapidly.

They rarely feature in the everyday vocabulary of the average person. This is perhaps because they are relatively obscure, hard to remember and pronounce, and until recently, not the focus of mainstream interest from media or investors. But that has changed. With interest accelerating and structural demand building, rare earths are emerging as a powerful investment frontier for 2026 and beyond.

[1] How Many Rare Earth Elements Are Really Inside Your Smartphone?, Medium, December 2025.
[2] International Energy Agency, Stanford Materials, 2025.
[3] International Energy Agency, Stanford Materials, 2025.

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