

# Insights Unwrapped

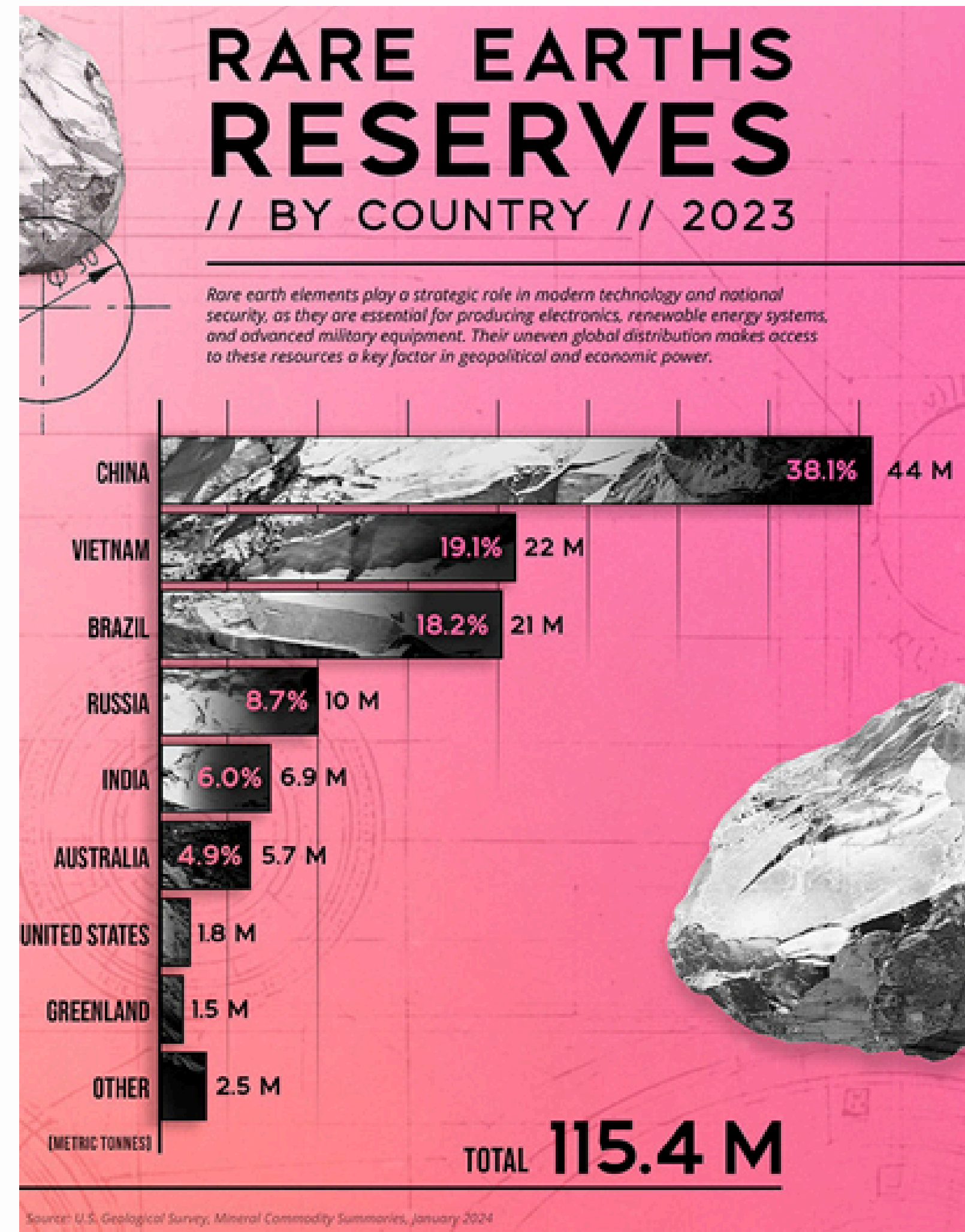
*Unlocking Rare Earth Elements (REEs)*



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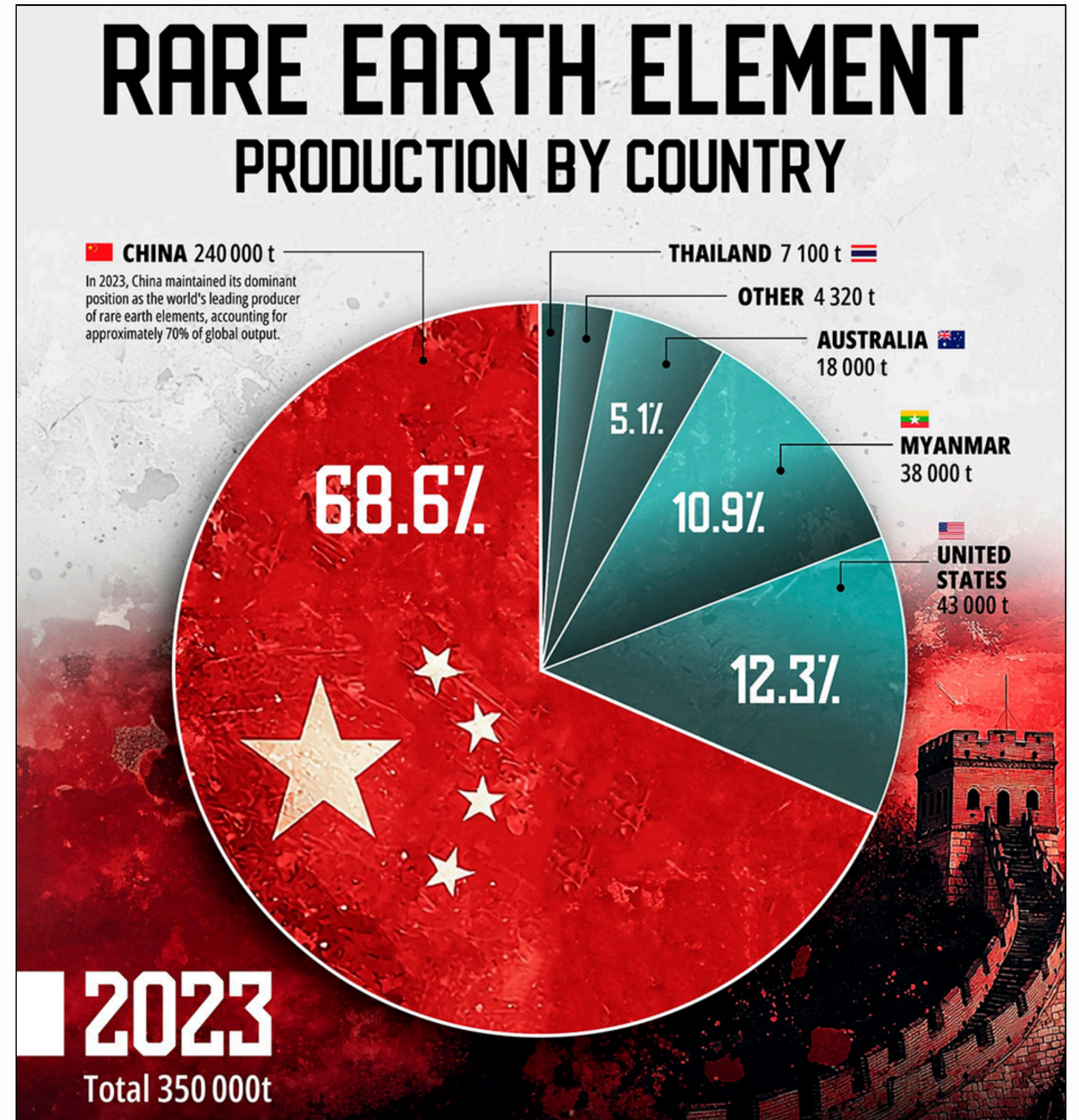
## Is it Rare?

- Rare earth elements (REE) are not in fact rare and can theoretically be mined in many places. China possesses roughly 40% of REE Reserves, while producing 70% and processing nearly 90% of the world's supply
- In the 1980s-1990s, China heavily invested in REE mining and processing infrastructure. By the 2000s, export quotas and restrictions solidified its control, forcing industries to relocate to China
- India holds about 7 million tons of REE —the fifth-largest in the world. But in 2023, we produced only 2900 tonnes or less than 1% of global output
- Vietnam aims to produce 2.02 million MT of rare earths by 2030. Tanbreez in Greenland plans to mine 500,000 MT annually by 2026, potentially making Greenland a major rare earth supplier to North America. **Both countries have a negligible share in production as of now**



# Global REE Production

- In 2024, China produced 270,000 MT of rare earth elements (REEs), more than **five times the production by the United States**
- In **April 2025, China imposed export controls on seven medium and heavy REEs**, requiring special licenses from the Ministry of Commerce
- **India, heavily reliant on Chinese REEs, imported 460 tonnes of rare earth magnets in 2024, valued at approximately \$199 million**
- China's export restrictions threaten production delays and price spikes for India, particularly **impacting its electric vehicle (EV) and defense sectors**



Source: US Geological Survey, Mineral Commodity Summaries, January 2024 (Mining Visuals)

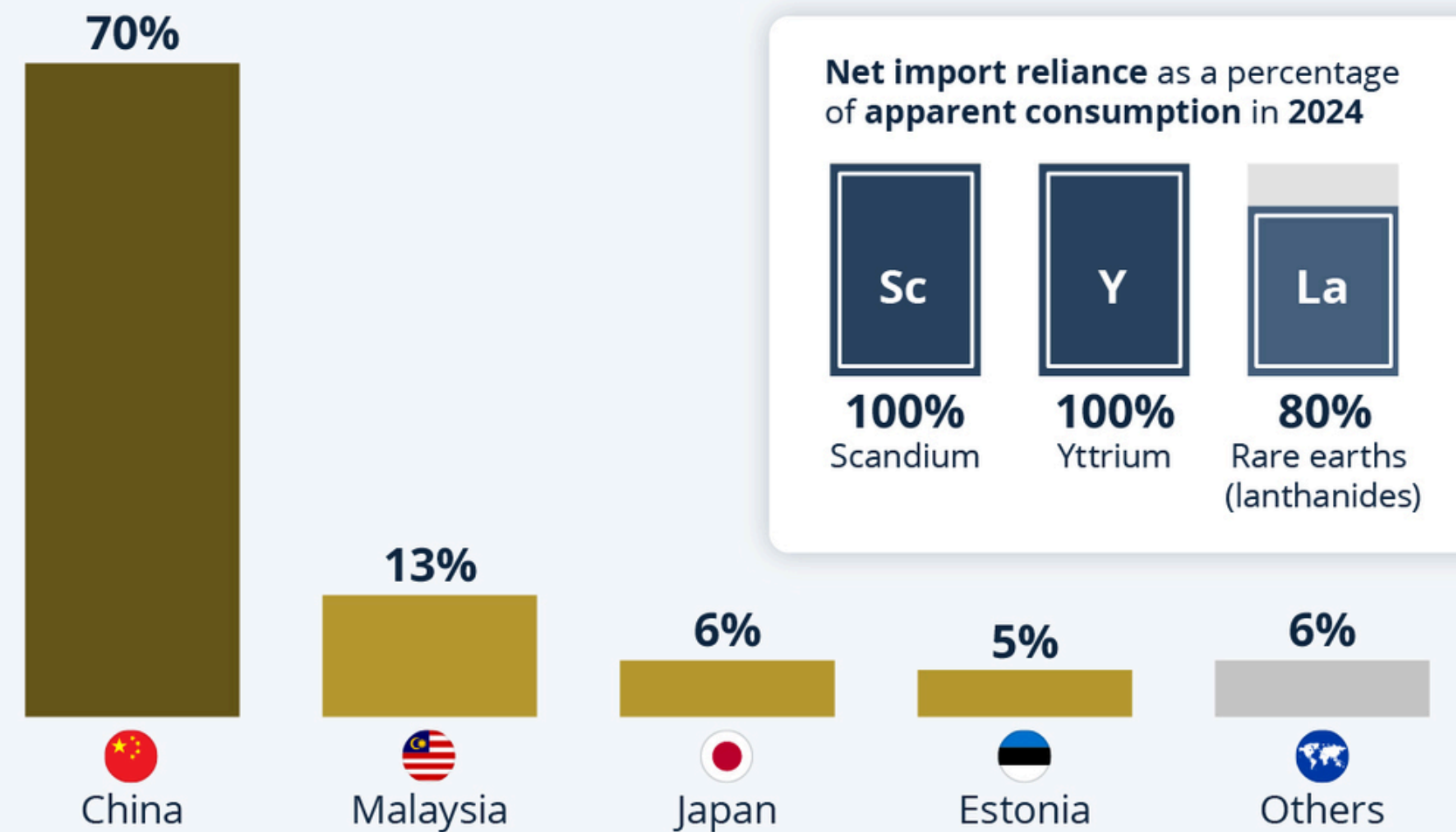
# Will China Hard-Bargain with the U.S.?

In retaliation to US tariffs, China has introduced fresh export controls on seven rare earth elements—primarily the heavier and more strategically valuable ones used in defence.

**Between 2020 and 2023, the United States relied on China for 70% of its rare earth compound and metal imports**, according to the US Geological Survey. The new Chinese restrictions could therefore disrupt key American industries, particularly those involved in high-tech and defence manufacturing

## The U.S. Relies Heavily on Rare Earth Imports From China

Share of U.S. imports of rare earth compounds and metals between 2020 and 2023, by source country\*



\* Data include lanthanides and yttrium but exclude most scandium

Source: U.S. Geological Survey



# Application of REE

Rare earth magnets are a small but indispensable component in every electric motor, from electric vehicle drivetrains to power windows and steering systems.

And these magnets can't be replaced on short notice without redesigning entire systems, which could take years.

## Rare earth minerals

- ▶ Collection of 17 chemical elements from the periodic table
- ▶ Vital component in high-tech products
- ▶ China supplies at least 95 percent of world's rare earths

### Some products that contain rare earth elements:

■ **iPods**

dysprosium, neodymium, praseodymium, samarium, terbium

■ **Wind turbines**

dysprosium, neodymium, praseodymium, terbium

■ **Hybrid vehicles**

dysprosium, lanthanum, neodymium, praseodymium

■ **Fibre optics**

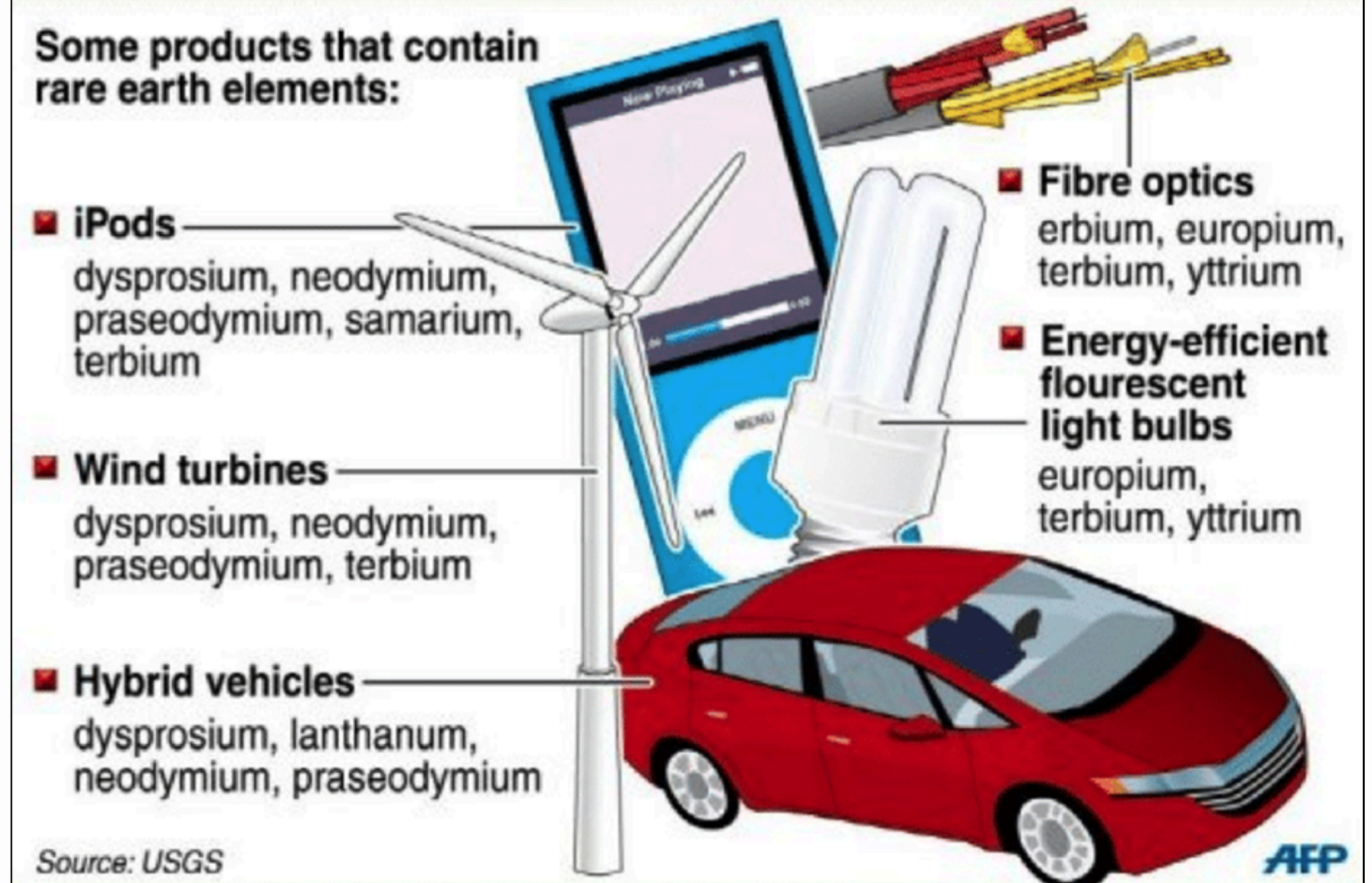
erbium, europium, terbium, yttrium

■ **Energy-efficient fluorescent light bulbs**

europium, terbium, yttrium

Source: USGS

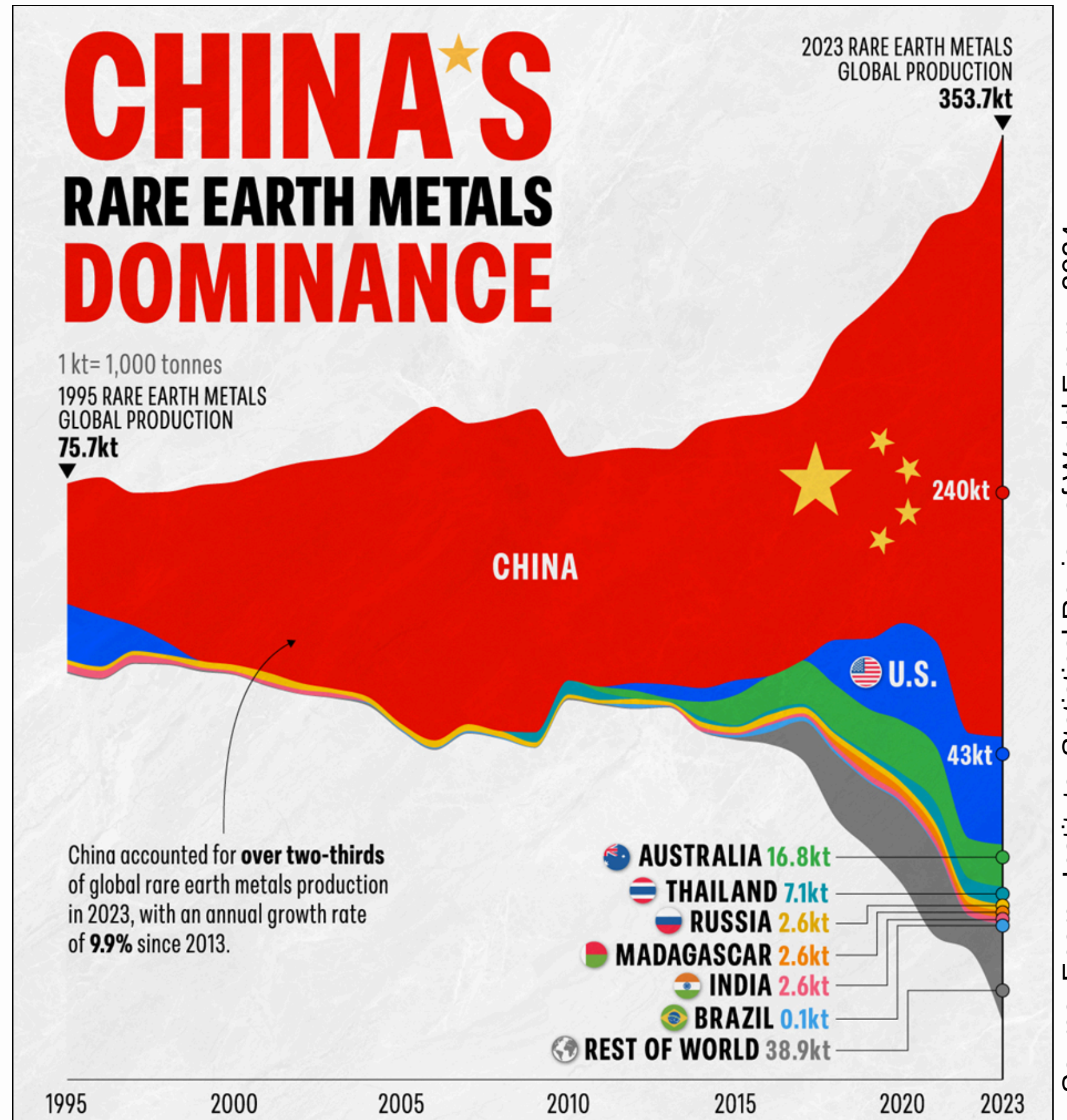
AFP



# China's Dominance: Fading or Holding Firm?

From the 2000s to the 2020s, China's share of global rare earth element (REE) production dropped from ~97% (peaking in 2010-2011) to ~60-70% by 2023.

Several countries increased their production share to fill this gap: The United States of America, Australia, Myanmar, Thailand and India



Source: Energy Institute, Statistical Review of World Energy 2024 (ref: voronoi by Visual Capitalist)

*Why is Trump strong-arming weaker countries?*

- Trump is reportedly considering **emergency powers to boost critical mineral production** in the US, which currently has only one active rare earth facility at Mountain Pass, California
- One reason that President Trump is strong-arming weaker countries- to secure mining rights and access untapped reserves in **Ukraine and Greenland**
- A chunk of US investment on clean energy (mainly dependent on the rare earth minerals) is likely to fall off presuming Trump's "**One Big Beautiful Bill**," gets through the Senate. The bill slashes support by ending tax credits for green energy generation and storage from 2029, phasing out clean tech manufacturing credits from 2028, cutting consumer tax breaks for EVs, hydrogen and residential solar from 2026, and blocking all tax credits for projects that use minerals sourced from China

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