Bundle | 5 October 2026

The US rare earth push: what comes next?

As the US relies heavily on China for rare earth materials, it is rolling out comprehensive strategies to build a secure supply chain

In this bundle



Commodities, Food & Agri

Why the US rare earth supply chain remains vulnerable

US rare earth production is growing, but China still leads the way

By Ewa Manthey and Coco Zhang



Commodities, Food & Agri

How rare earth users can navigate the US's mine-to-magnet strategy

As the US government enhances its support in building a secure rare earth supply chain, end users benefit from evaluating, reconfiguring, and investing in supply chain resilience

By Coco Zhang and Ewa Manthey

Article | 5 October 2026 COMMODITIES, FOOD & AGRI

Why the US rare earth supply chain remains vulnerable

The US has significant rare earth resources, but its supply chain remains heavily reliant on China. The biggest gaps do not sit in the mine, but rather in processing, heavy rare earth separation and magnet manufacturing



A rare earths mine in Mountain Pass, California

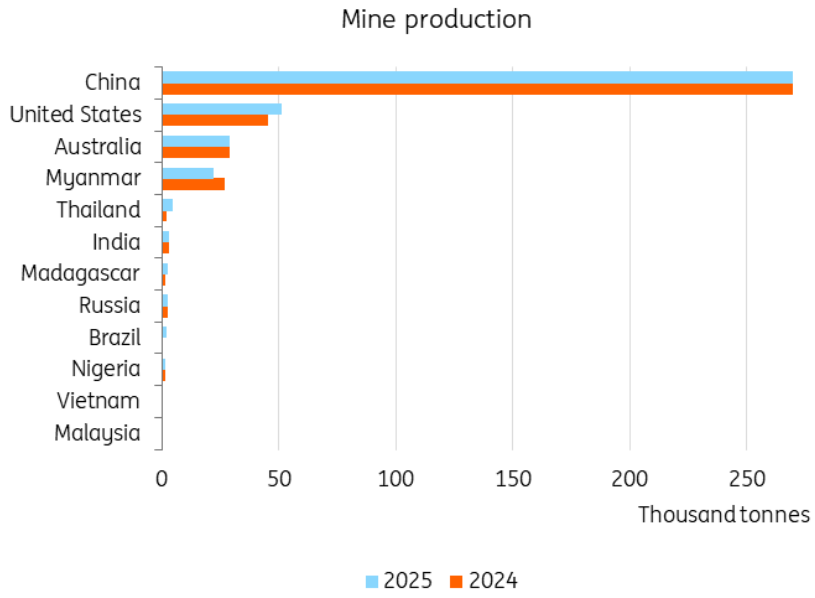
The US supply chain remains incomplete

Last year we wrote about how China could use its dominance of rare earth supply chains as political leverage. Although supply pressures eased after the US and China reached a framework agreement in June 2025, Beijing's subsequent expansion of rare earth export controls in October highlighted the persistent vulnerability of downstream supply chains.

Headline import dependence tells only part of the story. The US is producing more rare earths, but it still cannot process enough of that output into the specialised materials and magnets

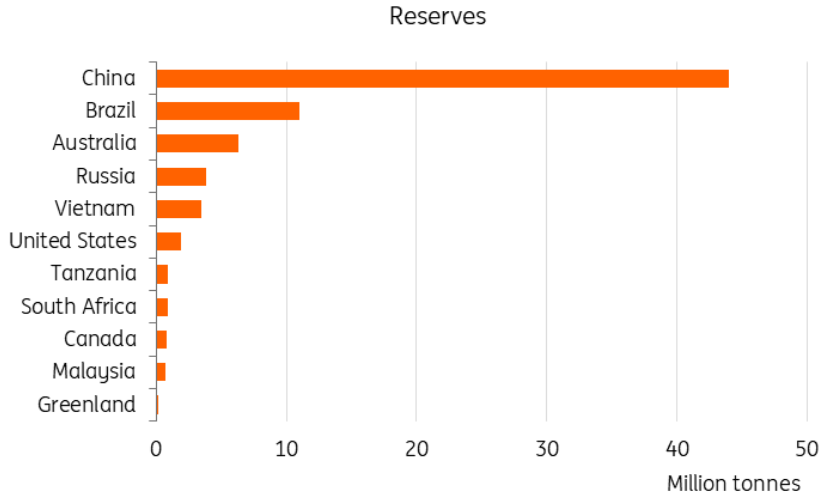
needed by domestic industry. The main weakness emerges after the ore leaves the mine.

US rare earth production is growing, but China still leads



Source: USGS, ING Research

Resource availability is not the main challenge for the US



Source: USGS, ING Research

Mining is only the first step

Once ore is mined, it must be concentrated and separated into individual oxides. These are then converted into metals and alloys before being manufactured into magnets. China

dominates these value-added stages.

Mountain Pass shows both the strength and weakness of the US position. MP Materials produced a record 50,692 tonnes of rare earth oxide in concentrate in 2025 and expanded production of separated neodymium-praseodymium oxide. The company also began manufacturing neodymium-iron-boron magnets in Texas in December 2025.

These are important steps towards a domestic mine-to-magnet supply chain. But one mine, increasing light rare earth separation and limited magnet production, cannot yet supply the full range of products needed by US industry.

The US rare earth capacity weakens further down the supply chain

Supply-chain stage	US status
Mining	Established, but concentrated
Concentrate production	Established
Light rare earth separation	Operating and expanding
Heavy rare earth separation	Early-stage and limited
Metallisation	Limited
Alloy production	Limited
Magnet manufacturing	Early-stage and limited
End-use manufacturing	Strong

Source: ING Research

The real choke points are downstream

US vulnerability increases further down the chain. According to the International Energy Agency (IEA), China accounts for 60% of mined magnet rare earths, 91% of refined output and 94% of permanent magnet production. Two decades ago, it produced only about half of the world's permanent magnets.

Mining capacity is growing in the US, but China retains an overwhelming advantage where most of the value is added. That position was built over decades through state support, integrated supply chains, technical expertise and proximity to downstream manufacturers. Together, these factors created economies of scale that are difficult for new entrants to replicate.

Separating individual rare earths is difficult because their chemical properties are so similar. Plants are expensive, technically complex and often tailored to a particular ore body and product mix. Processing can also generate toxic and, in some cases, radioactive waste.

Heavy rare earths are the weakest link

The US gap is widest in heavy rare earths. Dysprosium and terbium are added in small quantities to neodymium-iron-boron magnets to help them perform at high temperatures. This makes them particularly important for electric-vehicle motors, aerospace systems and defence equipment.

US output is concentrated in light rare earths such as neodymium and praseodymium. Commercial-scale domestic separation of dysprosium and terbium is only beginning.

MP Materials is developing a heavy rare earth separation line at Mountain Pass designed to produce around 200 tonnes of dysprosium and terbium a year. This would be an important domestic step, but it will not close the gap on its own. Domestic metallisation and magnet-making capacity also remain limited.

New separation facilities will also need reliable feedstock. Heavy rare earth production is concentrated in China and Myanmar, leaving US processors exposed even if domestic separation expands. Alternative deposits exist, but developing them and connecting them to metals, alloys and magnet production will take time.

Magnet dependence is the most immediate risk

For many strategic applications, the critical import is not an oxide but a qualified magnet or a component containing one. High-performance magnets must meet precise requirements for strength, heat resistance and durability. New suppliers must be tested and certified, making it difficult to switch during a disruption.

US magnet capacity remains small compared with domestic demand and China's industrial base. The IEA estimates that, even after announced projects, diversified magnet output outside China would meet well below 20% of demand outside China in 2035. The project pipeline is strongest in mining and weakest in magnets.

Demand is also rising across electric vehicles, wind turbines, robotics, data centres and defence. This increases the risk that diversified capacity will struggle to keep pace, even if announced projects proceed.

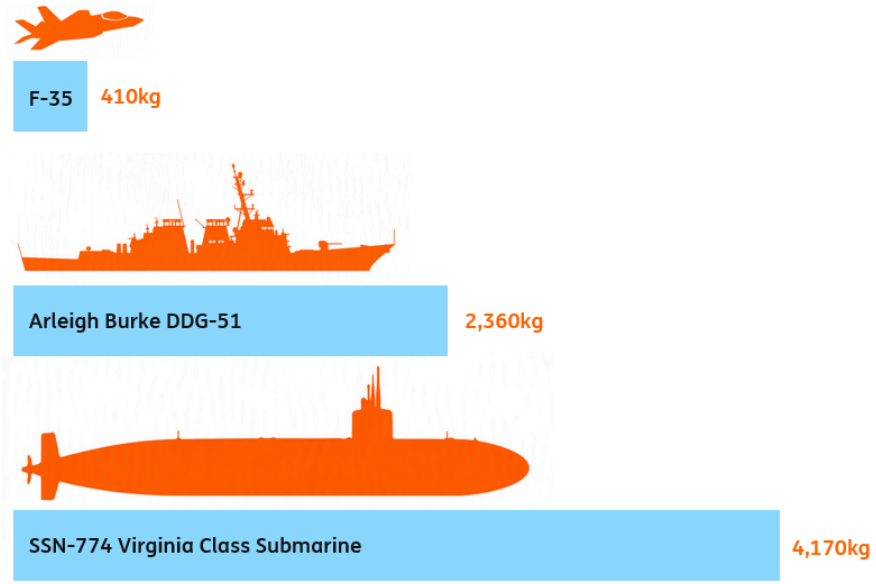
The defence deadline adds urgency

Rare earths are used in small quantities, but they are difficult to replace in advanced defence systems. The US Department of Defence estimates an F-35 requires more than 400kg of rare earth elements, an Arleigh Burke-class destroyer around 2.4 tonnes and a Virginia-class submarine around 4.2 tonnes.

The deadline is approaching. From 1 January 2027, US defence procurement restrictions will

extend across the supply chain for neodymium-iron-boron and samarium-cobalt magnets originating in China, North Korea, Russia or Iran, subject to limited exceptions.

Rare earth materials are essential to US defence systems



Source: US Department of Defense, ING Research

Figures converted from pounds and rounded

The US rare earth challenge is industrial rather than geological. Its vulnerability lies in the difficult stages between the mine and the finished component. The second article in this series examines how Washington is trying to close those gaps through domestic investment, friend-shoring and recycling.

Author

Ewa Manthey
Commodities Strategist
ewa.manthey@ing.com

Coco Zhang
ESG Research
coco.zhang@ing.com

Article | 5 October 2026 COMMODITIES, FOOD & AGRI

How rare earth users can navigate the US's mine-to-magnet strategy

The US is rolling out a multipronged strategy to reduce its reliance on China s rare earth supply chain. While it is unlikely to challenge China s dominance, it could provide meaningful alternative supply. End users therefore need to evaluate, reconfigure, and invest in supply chain resilience



Rare earths mine in Mountain Pass, California

Rare earth security rises to the top of the national agenda

Rare earth materials are critical to sectors such as semiconductors, defence, wind energy, and EVs, but the US remains heavily dependent on China for its supply. As trade uncertainty persists, securing the rare earth supply chain has become a national priority for the US.

After decades of underinvestment, the US is unlikely to challenge China's global dominance

anytime soon. But that is not necessarily the goal. Its increasingly sophisticated strategy is designed to build a meaningful alternative supply chain that can protect strategic sectors during geopolitical disruption.

For rare earth manufacturers, this creates opportunities to expand production and build more integrated supply chains. For end users, it highlights the need to better understand supply chain risks while investing in long-term resilience.

How the US is strengthening its supply chain

The US's government-led rare earth supply strategy is becoming increasingly comprehensive. It is expanding supply sources, combining domestic production, friend-shoring (manufacturing and sourcing from countries that are geopolitical allies), and recycling. It is also targeting the most vulnerable segments of the value chain: refining and downstream manufacturing.

1 Enhancing domestic production

Federal support has extended well beyond the traditional tools of grants and loans, to purchase agreements, price floors, and equity investments.

In June 2026, the Department of Commerce struck a deal with USA Rare Earth. In addition to $277m in direct grants and a $1.3bn senior secured loan to help develop vertically integrated production, the government will also acquire a 16% equity stake in the company, giving it a direct interest in the development of a domestic rare earth supply chain. Similarly, in 2025, the Department of Defence (DOD) announced it would acquire a 15% stake in MP Materials, alongside a 10-year purchase agreement for the company's magnets and a 10-year price floor for neodymium-praseodymium (NdPr) oxide, a critical input for permanent magnets.

These measures are critical in reducing investment risk and helping manufacturers expand production. Below are examples of new capacity announcements in the US, particularly at supply chain weak spots.

- **Processing and refining**: Ucore announced in May 2026 that it will build a facility capable of processing 9,000 tons of rare earth feedstock per year, a major step up from its demonstration-scale facility in Canada. MP Materials has not disclosed a production target, but output is already rising, with 1,757 tons of NdPr oxide produced in the first half of 2026 versus about 2,600 tons in all of 2025.
- **Magnets**: MP Material, Vulcan Elements, and USA Rare Earth have all announced plans to produce 10,000 tons of NdFeB magnets each at their respective facilities. In comparison, MP Materials produced its first magnets in Q4 2025, and USA Rare Earth expects to produce 600 tons/annum of magnets by Q4 2026.

These developments suggest government support is beginning to deliver results, with rising output in key supply chain bottlenecks and an ambitious pipeline of new capacity. However,

high production costs (discussed below) remain key hurdles. As a result, some parts of the supply chain could scale rapidly, while others will take longer to develop.

2 Friend-shoring

The challenge above shows that relying solely on domestic capacity is not enough. The US is therefore deepening collaboration with trade partners to further boost supply.

Australia and Brazil stand out as major partners. Although Australia's reserve is only 14% of China's, it is a global leader in exploration, with 89 active rare earth projects. Just as importantly, Australia is investing heavily in processing capacity, which can help address US supply chain vulnerabilities.

Following China's temporary rare earth export restrictions in October 2025, the US and Australia agreed to deepen cooperation on critical minerals and rare earths through an $8.5bn partnership. As such, companies such as Energy Fuels and Lynas Rare Earths are sourcing Australian feedstock for processing and manufacturing operations in the US.

Brazil's strength lies in its resource base. The country holds the world's second-largest rare earth reserves, estimated at roughly 25% of China's. In 2026, USA Rare Earth announced a $2.8bn deal to acquire Serra Verde, the operator of Brazil's only producing rare earth mine in Goiás.

> **Friend-shoring allows the US to secure supply more quickly and cost-effectively.**

The US DOD is actively supporting friend-shoring efforts in both countries, through methods such as loans and purchase agreements. While the US also has its own rare earth resources, developing new mines remains expensive and time-consuming. Partnering with countries such as Australia and Brazil allows the US to secure supply more quickly and cost-effectively.

3 Recovery and recycling

Recycling is another source of secure rare earth supply. Today, recycled materials account for less than 1% of global rare earth production, compared to 75% for aluminium and 33% for copper. This is largely because rare earths are embedded in small quantities within complex electronic products, making them difficult and expensive to recover. Therefore, most recycling technologies are still in the pilot or development stage.

> **The long-term recycling opportunity is significant.**

Yet the long-term recycling opportunity is significant. Recycling end-of-life products could

meet 10% of global rare earth demand by 2050, according to the International Energy Agency. In North America alone, there could be nearly 14,000 tons of end-of-life magnet rare earth feedstock available by then, from wind equipment, EV motors, and other e-waste. These could be an important niche to boost US supply security.

Government support will be important in scaling up recycling technologies, and the US has already begun to provide it. For example, Critical Materials Recycling received $3.4m in funding from the Department of Energy (DOE) to recover high-purity rare earth oxides from shredded computer hard drives and other e-waste.

Companies are also developing so-called "short-loop" recycling, which turns end-of-life magnets directly into new magnets without first breaking them down into raw materials. Noveon Magnetics is one example and has received nearly $30m in DOE funding to advance the technology.

Companies in the US have collectively announced 15,000 tons of end-of-life magnets and scrap recycling capacity by 2035, the highest outside China. But there is one catch: this already exceeds the projected available feedstock in North America by 2050. While not all announced projects will be built, the figures suggest that feedstock availability could eventually become a constraint.

US products would carry a premium

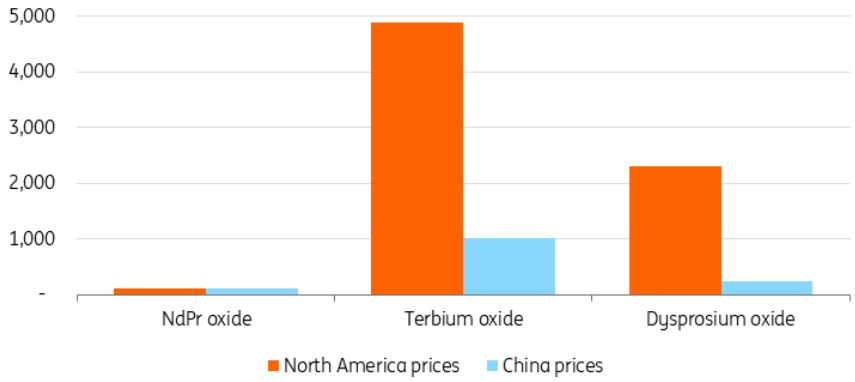
So where is the US's rare earth industry headed with all the government efforts?

We believe it can build a meaningful alternative supply chain that protects strategic sectors from geopolitical risks. However, matching China on cost will remain difficult. New US facilities require significant upfront investment, while China already has extensive production infrastructure. US labour costs are also substantially higher, widening the cost gap.

Competitiveness also varies significantly by rare earth element. For example, NdFeB magnets require neodymium, praseodymium, terbium and dysprosium. The US could become cost-competitive in producing NdPr oxide. But producing terbium and dysprosium oxides remains far more expensive than in China, as reflected in the much higher prices. This partly reflects the composition of US reserves, which contain way less terbium and dysprosium.

Selected rare earth intermediary product prices

$/kg



Source: S&P, ING Research. Data is as of August 2026

All these suggest that US-made rare earth products would continue to command a premium, and a fully localised supply chain remains unlikely in the near term. Friend-shoring supply and government support are critical in narrowing the cost gap, but full competitiveness is still hard and takes time.

What this means for companies that use rare earth products

For industries ranging from semiconductors and AI to defence, electronics, wind energy, and electric vehicles, the past year has highlighted the need to proactively manage rare earth supply chains. This includes three aspects:

- **Evaluate**: Companies need to carefully assess supply chain vulnerabilities, looking beyond direct suppliers to upstream sources of rare earth materials. This helps identify where dependencies on China remain and provides a clearer view of potential risks.
- **Reconfigure**: Where material risks are identified, companies may need to adjust sourcing strategies. This could include paying a reasonable premium for non-Chinese supply to improve supply security, an approach that is attracting growing interest. For particularly vulnerable materials, maintaining larger inventories may also help mitigate disruption risks.
- **Invest**: Companies can strengthen long-term resilience by securing purchasing agreements with alternative suppliers. They can also support broader supply chain resilience through investments in areas such as recycling, processing, and other capabilities.

The US's rare earth strategy aims to support both domestic producers and downstream users. However, end users would not benefit from waiting for these initiatives to deliver results. Proactively managing supply chains today will be critical to securing business continuity tomorrow.

Author

Coco Zhang
ESG Research
coco.zhang@ing.com

Ewa Manthey
Commodities Strategist
ewa.manthey@ing.com

Disclaimer

This publication has been prepared by the Economic and Financial Analysis Division of ING Bank N.V. (“**ING**”) solely for information purposes without regard to any particular user's investment objectives, financial situation, or means. *ING forms part of ING Group (being for this purpose ING Group N.V. and its subsidiary and affiliated companies).* The information in the publication is not an investment recommendation and it is not investment, legal or tax advice or an offer or solicitation to purchase or sell any financial instrument. Reasonable care has been taken to ensure that this publication is not untrue or misleading when published, but ING does not represent that it is accurate or complete. ING does not accept any liability for any direct, indirect or consequential loss arising from any use of this publication. Unless otherwise stated, any views, forecasts, or estimates are solely those of the author(s), as of the date of the publication and are subject to change without notice.

The distribution of this publication may be restricted by law or regulation in different jurisdictions and persons into whose possession this publication comes should inform themselves about, and observe, such restrictions.

Copyright and database rights protection exists in this report and it may not be reproduced, distributed or published by any person for any purpose without the prior express consent of ING. All rights are reserved. ING Bank N.V. is authorised by the Dutch Central Bank and supervised by the European Central Bank (ECB), the Dutch Central Bank (DNB) and the Dutch Authority for the Financial Markets (AFM). ING Bank N.V. is incorporated in the Netherlands (Trade Register no. 33031431 Amsterdam). In the United Kingdom this information is approved and/or communicated by ING Bank N.V., London Branch. ING Bank N.V., London Branch is authorised by the Prudential Regulation Authority and is subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. ING Bank N.V., London branch is registered in England (Registration number BR000341) at 8-10 Moorgate, London EC2 6DA. For US Investors: Any person wishing to discuss this report or effect transactions in any security discussed herein should contact ING Financial Markets LLC, which is a member of the NYSE, FINRA and SIPC and part of ING, and which has accepted responsibility for the distribution of this report in the United States under applicable requirements.

Additional information is available on request. For more information about ING Group, please visit www.ing.com.