

Critical minerals: Chinese export controls threaten supply chains across many industries | Credendo

China introduced new export controls on seven heavy rare earths

On 15 April, President Donald Trump signed an executive order to investigate the national security risks of relying on imported processed critical minerals. The investigation will assess supply chain vulnerabilities, economic impacts of foreign market distortions and potential trade remedies for a secure domestic supply of these materials.

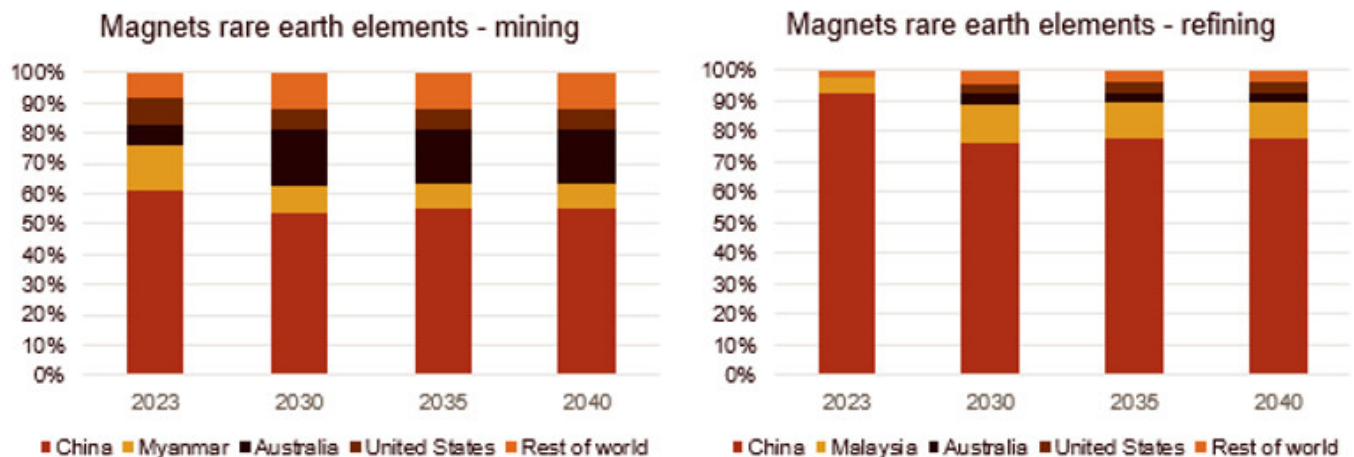
This investigation follows China's announcement in December 2024 of the ban on exports of gallium, germanium and antimony to the United States. More recently, China has suspended exports of seven heavy rare earth metals and magnets (samarium, gadolinium, terbium, dysprosium, lutetium, scandium, yttrium) to all countries. Shipments of heavy rare earths have already been suspended at many Chinese ports as the Chinese government is drafting a new regulatory system. The heavy rare earth metals and magnets affected by the export ban will now require a special export licence to be shipped out of China. Once implemented, this system could potentially prevent some companies or countries from accessing these crucial materials. This measure has the potential to significantly disrupt global supply chains and affect many industries, ranging from military contractors and aerospace manufacturers to automotive, semiconductors and clean energy companies, all of which rely heavily on these essential components.

China's recent decision has raised concerns about how long it will take to get the necessary export licences and how many will be available. The approval process could be lengthy and thus, the extent of stockpiles in Western countries and companies will be crucial. Maintaining inventory of critical minerals over several years is a common practice due to the typically small quantities involved. However, stock levels can differ among companies and some might experience a rapid depletion of their stocks. On 12 May, the USA and China announced their decision to reduce tariffs on each other for a period of at least 90 days. This de-escalation of the US-China trade war could lead to an acceleration in the issuance of the necessary export licences for US customers. Prior to this truce announcement, the likelihood of US customers obtaining these types of licences was very low. Nevertheless, China is unlikely to lift its export controls, as these measures are integral to its strategy to remain the dominant player in the mining and processing of critical minerals.

China is dominating the mining and refining markets of rare earth magnets

China's dominance in the rare earth magnets market is a significant concern for the United States and other countries, as a complete ban on exports could have serious implications. Rare earth magnets make up a small portion of China's overall exports to the United States and other nations. Halting shipments would likely have minimal economic impact on China but could cause significant disruption internationally, given that China produces the majority of the world's rare earth magnets. In the long term, these types of export restrictions could adversely affect the Chinese economy. However, in the short term, they can be used as powerful negotiation tools. As illustrated in the graph below in 2023, China accounted for 61% of global mining of rare earth magnet elements and for 92% of global refining of rare earth magnet elements (these figures do not take into account the new export restrictions). The current situation threatens years of efforts to build global supply chains for critical minerals and highlights the West's challenge to reduce dependence on China. Building infrastructure to reduce reliance on China would take years and would involve extensive research, permits and construction. Higher prices might encourage investment in new mines and facilities, but investors may hesitate due to China's ability to flood the market and lower prices.

Geographical distribution of total supply for magnets rare earth elements



Source: IEA (2024), Critical Minerals Data Explorer, IEA, Paris <https://www.iea.org/data-and-statistics/data-tools/critical-minerals-data-explorer>

The new restrictions on heavy rare earths could have a detrimental impact on multiple sectors

China's recent suspensions of exports of critical minerals have the potential to significantly impact the automotive industry. These minerals are essential for manufacturing various automotive components, particularly in electric vehicles and advanced electronics. Heavy rare earth magnets are crucial for many types of electric motors, while critical minerals such as graphite are key components in lithium-ion batteries used in electrical vehicles. Shortages of these materials and delays in their delivery could raise production costs for electrical vehicle batteries and motors, and slow down production for smaller motors, speakers, camera lenses and LEDs, which are also used in automotive manufacturing. The requirement for special export licences could further complicate and slow down supply chains. These measures could potentially have a detrimental impact on a sector already facing challenges, such as competition from cheap and competitive electrical vehicles from China and the Trump administration's trade policies.

Besides the impact on the automotive sector, the lack of substitutability of those materials risks disrupting supply chains of other products, such as wind turbines, semiconductors, loudspeakers, computer hard drives, television and computer screens, jet engines, medical devices like laser surgery materials and MRI scanners, as well as key defence technologies.

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