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PERSPECTIVE ON A TIMELY POLICY ISSUE

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Old priorities, new contexts

The institutional roots and new developments of China's rare earth policy

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In the past year, China has intensified its export control regime governing rare earth elements (REEs, or rare earths) and related technologies, de-facto pulling what has long been one of Beijing's most powerful potential levers of supply-chain influence. In April 2025, the Ministry of Commerce (MOFCOM) introduced new licensing requirements covering seven key REEs and a range of magnets used in defence, energy and advanced manufacturing.[1] The framework was expanded again in early October 2025: five additional elements[2] were added to the controlled list, and Beijing introduced an unprecedented extraterritorial provision requiring government approval for the export of any component or product manufactured abroad if it incorporates China-origin rare earths or Chinese technology.[3]

As a result, supply-chain disruptions rippled across multiple sectors, with yttrium markets still experiencing shortages.[4] These pressures triggered high-level diplomatic engagement, and following a meeting between Xi Jinping and Donald Trump, China agreed to delay enforcement of parts of the October measures for one year (until November 2026) and started to issue general licences to exporters.[5] In exchange, the United States suspended the '50 percent ownership rule' for subsidiaries of entities listed on the US Bureau of Industry and Security (BIS) Entity List.[6] Despite that, barriers still exist and China's export controls are here to stay.

Businesses, governments and investors are now working to understand the extent of China's willingness and ability to use its dominance of the rare-earth value chain for geopolitical leverage, and the implications of this for both civilian and military production worldwide.

However, China's capability to leverage such strong control of the REE supply chain is not a novel capability, instead one that has emerged after decades of domestic focus. The push behind China's rare-earth strategy has always been twofold. On the one hand, there is an outward looking desire to shape and protect global supply chains and, on the other, an internal concern that China may not produce enough REEs to meet its own expanding domestic demand, particularly as the (green) tech transition accelerates. As rare earths are fundamental to the clean-energy economy, to technology manufacturing, and to advanced defence applications, ensuring sufficient domestic supply has long been a strategic priority for Beijing. Figure 1 illustrates the development of key policies to first increase China's ability to mine and refine REEs and produce magnets; then, to grow global market shares while retaining such an ability and production within its borders.

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1 Ministry of Commerce (2025a).

2 Holmium, erbium, thulium, europium and ytterbium. In April 2025, China had already imposed restrictions on samarium, gadolinium, terbium, dysprosium, lutetium, scandium, yttrium.

3 Ministry of Commerce (2025b).

4 Jackson et al. (2025).

5 Cash (2025); Ministry of Commerce (2025d).

6 The White House (2025); Ministry of Commerce (2025c).

Figure 1. Timeline of selected policies to increase REE self-sufficiency

The self-sufficiency blueprint

China's dominance in the rare-earth sector is not a simple function of abundance of mineral stocks, but rather the result of a coordinated, although often locally negotiated, industrial strategy combining state-directed planning, territorial experimentation and manufacturing ecosystem integration. Scholars emphasise that China's rare-earth governance is characterised by what they call *fractured extraction*, in which central authorities, provincial governments, municipal actors and firms bargain and cooperate rather than follow purely top-down directives.[7] Other scholars highlight how China's global dominance stems largely from its control over the *midstream* (smelting, separation and magnet manufacturing) rather than from extraction alone.[8]

One important factor is the difference between light rare earth elements (LREE) and heavy rare earth elements (HREE). China is rich in the former, which includes elements such as lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium and gadolinium. These are the most abundant REEs globally. However, HREEs such as dysprosium, yttrium and terbium are more difficult to find, with a concentration in areas like southern China, northern Myanmar, Madagascar and Vietnam.[9]

Ultimately, as shown in Table 1, policies in the REE sector have been serving three overarching aims:

- Boost and upgrade internal production
- Retain value chains
- Gain market shares.

[7] DiCarlo, Combs & Deberdt (2025).

[8] Bedford (2025).

[9] Bedford (2025).

As Bedford argues, the race to secure rare earths is not just about resources, but also about system-building. China successfully integrated rare-earth mining with midstream refining, component manufacturing (such as magnets and alloys) and downstream industries (electric vehicles, wind turbines, drones, aerospace), creating a self-reinforcing industrial ecosystem.[10] Additionally, as detailed by the Oxford Institute for Energy Studies, China's rare-earth ecosystem benefits from state-backed credit, industrial land policy and guaranteed domestic demand from EV, defence and wind-turbine manufacturing sectors – and that is before taking into account foreign demand.[11]

China's rare-earth policy model is defined not only by state control and multi-level negotiation, but also by long-term ecosystem planning and domestic manufacturing integration – a hybrid structure that is neither purely top-down nor market-driven, but state-coordinated and territorially adaptive.

China's expansion of export controls on rare earth elements and related technologies is the latest expression of a decades-long industrial strategy that has steadily positioned Beijing at the centre of the global rare-earth value chain, as argued by Mercator Institute for China Studies (MERICS).[12] The new licensing regime demonstrates China's willingness to leverage its structural dominance at precisely the moment when global dependence on rare earths is deepening across both civilian and military sectors. The immediate market disruptions underscore the extent to which China's decades-long regulatory decisions now have implications for the world.

The race to secure rare earths is not just about resources, but also about system-building.

China's development of its rare-earth industry follows a familiar approach seen in other sectors it has deemed strategically vital[13]:

1. Early collaboration with foreign firms that possess the needed know-how, albeit in the case of REE highly restricted from the beginning.
2. Increasing restrictions on foreign participation.
3. Consolidation under state-directed national champions.

But for rare earths, the window for foreign involvement was far more limited and closed much earlier than in other critical sectors.

[10] Bedford (2025).

[11] Andrews-Speed & Hove (2023).

[12] Arcesati et al (2024).

[13] Xie (2025).

Table 1. China's REE industrial policy: objectives and policies

Objectives	Policy type	Measures description
Gain market shares	• Export tax rebates • Domestic supply subsidies	• Lowered export costs to boost competitiveness. • Increased foreign reliance on China's supply • Ensured cheap internal supply
Boost and upgrade internal production	• Cancellation of export tax rebates • Rare Earth Industry Development Plan • National mining caps • Industry consolidation • Central investments/funding channels in industrial upgrading	• Promoted industrial upgrading and aligned with Made in China 2025 • Enabled investment in advanced applications (e.g. permanent magnets) • Consolidated dozens of firms into six and later three major groups • Local adaptation of policies and objectives
Retain value chains	• Export quotas and licensing • Directive planning and environmental standards • Rare earth management regulations • Comprehensive regulatory frameworks (i.e. Export Controls Law and Foreign Trade Law)	• Institutionalised sustainable development and protective mining • Formalisation of licensing, quotas, traceability and penalties • Export controls extended to technologies and equipment, protecting know-how • Built downstream clusters to retain intellectual property, jobs and trade leverage

Early strategic identification and tight protection

China's strategic awareness of rare earths emerged early, even before Deng Xiaoping's famous 1992 declaration that 'The Middle East has oil; China has rare earths' (中东有石油，中国有稀土).[14]

For example, mining of REEs at Bayan Obo in Inner Mongolia began in the 1950s. The same deposit is still accounting for more than 40 per cent of total known REE reserves globally and approximately half of global production.[15] The 1960s witnessed discoveries in Shandong and Sichuan, as well as the discovery of ion-adsorption clay deposits[16] in southern Jiangxi, Guangdong, Fujian, Hunan

[14] DiCarlo, Combs & Deberdt (2025).

[15] Fan, et al. (2016).

[16] Ion-adsorption clay deposits enable low-cost, low-impact extraction through in-situ leaching with simple salt solutions, such as ammonium sulphate, under ambient temperature and pressure. Their low radioactivity significantly reduces waste-handling challenges. By contrast, most other rare earth deposits demand energy-intensive beneficiation and cracking of hard minerals, involving high-temperature processes and the management of radioactive by-products like thorium and uranium.

Through the 1980s, the Chinese government selectively encouraged technology exchange with foreign firms...to acquire know-how in technology exchange, equipment supply and training.

and Guangxi. In 1975, the State Council established the National Rare Earth Development and Application Leading Group, starting a state-driven effort to grow research, exploration and industrial capacity. By the late 1980s, China had become a global producer of REEs.[17]

Foreign involvement during this period was limited and carefully supervised. Generally, neither foreign mining nor foreign majority ownership of separation facilities was permitted. Through the 1980s, the Chinese government selectively encouraged technology exchange with foreign firms, primarily from Japan, the United States and Canada to acquire know-how in technology exchange, equipment supply and training.[18] However, none of these partnerships resulted in foreign-operated mines, concentrators or separation plants.

In the late 1970s, Japan's Inoue Japax Research, Mitsui Metal Mining Company and Mitsui Company sought joint ventures (JVs) to carry out collaborative research in REE-related technologies.[19] By 1989, rare-earth cooperation expanded in downstream magnet manufacturing. The Chinese firm Ke Ning Da partnered with US-based Tredas International to produce around 40 tonnes of Neodyum–Iron–Boron (NdFeB) magnets. This was a downstream JV with no foreign access to mines or chemical processing.[20] Thanks to regulations, domestic control of upstream and midstream rare-earth activities remained absolute.[21]

These collaborations unfolded as China rapidly expanded output and began exporting at competitive prices, leading to shutdowns in the United States, Australia and elsewhere.[22] Unlike other commercial sectors, China's rare-earth sector was protected from the outset, providing one of the earliest examples of the country's modern industrial-policy model.

17 Andrews-Speed & Hove (2023).

18 Goldman (2014).

19 Goldman (2014).

20 Goldman (2014).

21 Bryant (2015).

22 Goldman (2014).

Table 2. Selected early Chinese collaborations with Japan, the United States and Canada

Year	Parties involved	Details of agreement/investment
1989	Ke Ning Da Industry (China) and Tredas International (Unites States)	Joint venture to produce 40 tonnes of NdFeB magnets annually; US equipment used to upgrade Chinese plant
1990	MPV Lanthanides (China–United States)	Merger of China Metallurgical Import & Export with US firms Pacific Chemicals and Engineering, and Universal Victory; focused on rare earth products and services
1991	Canada Rare Earth Metal Co. (Canada) and Ganjian Rare Earth Co. (China)	Built $3.3M plant in Ganzhou to process 200 metric tonnes of mixed rare earths worth $14M annually
Early 1990s	Advanced Materials Resources (Canada) and Beijing New Precision Alloy Co. (China)	60% stake in 300-tonne rare earth oxide facility in Jiangyin; 60% stake in permanent magnet production venture
1995	Beijing San Huan New Materials High-Tech Inc. and China National Non-Ferrous Metals Import & Export Corp. (China) and Sextant Group Inc. (United States)	Purchased Magnequench (General Motors subsidiary producing Nd-Fe-B magnets); agreed to keep plant in Indiana, US, open for 5 years, then closed and moved operations to China

SOURCE: Authors selection from Goldman (2014)

Foreign participation after the 1990s

By the early 1990s, China had become the world's dominant producer, exporting large quantities of rare earths at low prices and driving foreign competitors out of the market.[23] The process was not always forced: often, countries and companies willingly traded having an own production of REEs for a large and cheap supply from China.

Foreign participation in China following this period became increasingly limited and tightly regulated. It centred almost exclusively on midstream processing and downstream magnet manufacturing rather than upstream extraction. China's strategic designation of REEs as protected resources and the introduction of mining licenses, production quotas and foreign-investment restrictions (see Figure 1) effectively prevented foreign companies from gaining meaningful control over extraction. For example, a 1991 Chinese policy decree made it illegal for foreign JVs to mine 'ionic rare earth'[24]

[23] Mancheri, et al. (2019); Andrews-Speed & Hove (2023).

[24] A unique type of rare-earth ore found mainly in southern China, and they're extremely important to the global supply of HREEs such as dysprosium (Dy), terbium (Tb), and yttrium (Y).

in China and restricted provision of geological data to non-Chinese people.[25]

A second wave of foreign participation emerged during the 2000s, focused on high-value processing and advanced materials. For example, the French firm Rhône-Poulenc (later Rhodia, then Solvay) partnered with local entities in Baotou to create Baotou Luxi Rhône Rare Earths and later, in 2006, integrated a separation facility in Liyang (Jiangsu).[26]

Canada's Neo Performance Materials became a significant actor, operating two major separation plants – Jiangyin Jiahua Advanced Material Resources (JAMR) in Jiangsu and Zibo Jiahua Advanced Material Resources (ZAMR) in Shandong – under varying JV structures but with long periods of majority foreign control. These facilities supplied high-purity oxides and magnet-grade materials to global supply chains until China's consolidation and regulatory tightening culminated in Neo's divestment between 2024 and 2025.[27]

Table 3. Selected foreign collaboration in the 2000s

Year	Company	Chinese partner	Activity type
1990s–2000s	Rhodia/Rhône-Poulenc (France)	Baotou Rare Earth Research Institute, local government	Rare-earth separation and refining
2000s–2020s	Neo Performance Materials (Canada)	Jiangyin Jiahua Advanced Material Resources (JAMR); Zibo Jiahua (ZAMR)	Separation and advanced materials
2010s	Ferro Corporation (Unied States)	Baotou Jin Meng Rare Earth Co., Ltd	Polishing powders (ceria-based)
2011	Showa Denko (Japan)	None	Magnetic alloy production
2011	Santoku (Japan)	China Minmetals	Processing and materials
2012	Shin-Etsu (Japan)	None	Magnet alloys
2015	Hitachi Metals (Japan)	Beijing Zhongke Sanhuan	Magnet manufacturing

Source: Goldman (2014); SMM (2015); Tremblay (2012); Ecclestone (2023); Neo (2025)[28]

[25] Shen, Moomy & Eggert (2020).

[26] Tse (1997); People's Daily (2000).

[27] Neo (2025).

[28] Asian Metal (2013).

Japanese companies remained heavily involved in magnet materials and alloys, leveraging their technological expertise. Showa Denko shifted magnetic-alloy production to Jiangxi[29]; Shin-Etsu established a magnet-alloy facility in Fujian[30]; and Santoku partnered with China Minmetals in Ganzhou, the centre of China's heavy-rare-earth production.[31] Hitachi Metals' 2015 JV with Beijing Zhongke Sanhuan was strategically significant, combining Hitachi's leading NdFeB intellectual property with one of China's largest domestic magnet producers.[32]

While foreign firms benefited from China's scale and supply security, their market access remained constrained by quota systems, sourcing rules and top-down industrial restructuring – especially after 2014. Ultimately, this increased China's knowledge and leverage at the expense of alternative suppliers.

Consolidation: from six groups to two national champions

Consolidation of companies operating in the REE sector began in 2014 when China's Ministry of Industry and Information Technology (MIIT) initiated a sweeping restructuring to form six major rare-earth groups.[33] The 'Big Six' were:

1. Aluminium Corporation of China (CHALCO)
2. China Minmetals Corporation
3. Ganzhou Rare Earth Group Co.
4. China Southern Rare Earth Group
5. China Northern Rare Earth Group
6. Xiamen Tungsten Co., Ltd

By 2016, the consolidation was largely complete. Hundreds of smaller miners and refiners were absorbed under the umbrella of these six groups. This restructuring aimed not only to centralise oversight but to eliminate severe overproduction, curb illegal mining and address widespread environmental degradation, particularly in southern ionic-clay deposits where thousands of unregulated small-scale miners had operated for years.[34]

Some argue that the consolidation came as a response to a case brought in front of the World Trade Organization in 2012 by the United States, the European Union (EU) and Japan, which concerned China's weaponised exports of REEs against Japan in 2010.[35] However, MIIT's reduction of export quotas that made consolidation necessary was announced in March, prior to the territorial dispute.[36]

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29 Reuters (2011).

30 Shin-Etsu (2012).

31 Santoku (2026); Asian Metal (2013).

32 SMM (2025); Research in China (2015).

33 The consolidation process described does not include companies producing REE magnets.

34 Mancheri et al. (2019); Langkau & Erdmann (2021); DiCarlo, Combs & Deberdt (2025).

35 Bedford (2025).

36 Shen, Moomy & Eggert (2020).

Internationally, consolidation has strengthened Beijing's ability to influence global prices, regulate supply and set technical standards.

A major turning point came in December 2021, when the Big Six further consolidated into three entities. The REE operations of CHALCO, China Minmetals Corporation and Ganzhou Rare Earth Group Co. (plus the two research entities China Iron & Steel Research Institute Group and Grinm Group Corporation Ltd) merged to form China Rare Earth Group.[37] This new entity, supervised by the State-owned Assets Supervision and Administration Commission, consolidated most of China's heavy-rare-earth capacity.[38]

By 2025, reporting indicated that rare-earth production quotas were being allocated almost exclusively to China Rare Earth Group and China Northern Rare Earth Group, marking the final phase of consolidation. Smaller entities such as Xiamen Tungsten and Guangdong Rare Earth Industry Group saw their rare-earth operations effectively folded into the quota systems of the two national champions.

China has gained tighter control over the entire value chain, improved environmental oversight and accelerated technological upgrading in separation, recycling and advanced magnet materials. Internationally, consolidation has strengthened Beijing's ability to influence global prices, regulate supply and set technical standards.

This restructuring reflects China's broader industrial-policy logic, which includes vertical integration, environmental governance and strategic control over critical minerals. It underscores Beijing's long-standing intention to manage rare earths not as commodities, and not even uniquely nor primarily as geoeconomic leverage, but as strategic assets essential to national security and technological advancement.

By the late 2010s and early 2020s, tightening controls of technology exports, stricter environmental rules and rising geopolitical tensions further limited foreign autonomy and presence in China's rare-earth ecosystem.

Chinese companies abroad: expanding global influence

While foreign presence in China's rare-earth sector has diminished, Chinese companies have rapidly expanded overseas. Their strategies include equity stakes, joint ventures, long-term offtake agreements and direct investment in mining and processing projects.

[37] Zhou & Brooke (2022).

[38] Bedford (2025); Reuters (2025b).

Chinese-linked operations in Myanmar and Laos – some formal, others informal – have become major suppliers of heavy rare earths to Chinese processors.[39] These activities often involve complex local partnerships, including arrangements with militias and informal authorities in border regions.

Table 4. Overview of China's international REE activities

Type of activity	Countries
Mining (formal)	Laos, Tanzania
Mining (informal)	Myanmar, Thailand
Refining/Processing	Laos, Myanmar
Stakes in foreign firms	United States, Australia, Canada

Among these firms, Shenghe Resources is one of the most visible globally. It has accumulated significant holdings overseas, including its controlling stake in Peak Rare Earths and therefore the Ngualla project in Tanzania.[40] Shenghe also maintains equity stakes in Energy Transition Minerals, which is linked to the now-halted Kvanefjeld project in Greenland.[41]

Table 5. Overview of Shenghe's key international activities

Country	Activity
United States	Minority stake in MP Materials
Australia	Majority shareholder in Peak Rare Earths; Minority stakes in Energy Transition Minerals (ETM)
Tanzania	Control of Ngualla Project (via Peak Rare Earths)
Greenland	Kvanefjeld project (via Energy Transition Minerals); stopped
Canada	Minority stakes in Vital Metals

Its international footprint reflects a strategic effort to secure heavy rare earths abroad (i.e. in Laos and Madagascar) while integrating foreign upstream assets into China's dominant midstream and downstream industries. This includes recent efforts to increase the presence of its subsidiary Jiacheng Mining in Madagascar, an emerging contested area for REEs.[42] Other companies like Xiamen Tungsten and Chifeng Jilong are active internationally, for example in Laos, a country rich with heavy rare earths, where they operate joint mining and processing ventures.[43]

39 Zan (2025); Han et al. (2025).

40 Reuters (2025a).

41 Henriques & Böhm (2022).

42 Hidayat (2025).

43 Kawase (2025).

Overall, China's overseas rare-earth presence continues to expand across Africa and Southeast Asia**. This reflects a long-standing dual strategy: diversifying external supply of heavy REEs while strengthening the integration of foreign resources with China's unrivalled refining and magnet-production capacity.**

Thus, China's Premier Li Qiang's proposal at the G20 meeting in November 2025 to create an international initiative on 'green minerals' should not come as a surprise.[44] The proposal matches all China's REE industrial policy goals: it can diversify China's own external supply of REEs, strengthening the integration of foreign resources with China's, and allow China to increase the resilience of its economic and technological development objectives.

Recommendations for Europe

For European policymakers, these developments carry strategic implications.

First, China's approach demonstrates that command over critical minerals is not simply a function of geological endowment, but of long-term policy coherence that creates a functioning vertically integrated system not only for supply but also for demand: resource protection, strategic capital allocation, technology acquisition, environmental regulation and corporate restructuring aligned towards a shared objective.

European countries, for example, still lack an integrated system that stimulates demand for these materials. Downstream industries, such as battery manufacturing, electronics and aerospace, are fragmented and have so far been unable to coordinate, partly due to regulatory complexity and limited large-scale manufacturing. Without robust demand, supply alone cannot sustain competitiveness, and as far as REEs are concerned, China has been more successful in linking production with high-volume applications both at home and abroad.

The European push for defence manufacturing and the EU's newly introduced RESourceEU Action Plan, seek to address the issues above through measures which include creating a coordination centre – the European Critical Raw Materials Centre – and activating €3bn over 2026 for strategic projects.[45] For example, Vulcan's lithium extraction in Germany has already received €250m.[46] At the same time, however, RESourceEU can only go as far as a framework can; many of the proposals remain dependent on further debate and decisions and, as is often the case with EU initiatives, are non-binding. Ultimately, how member states will respond to the Action Plan and the challenges that geopolitics places in front of them will be determining its success.

Second, China's internal concerns, particularly the fear of insufficient supply to meet accelerating (green) technology demand has two important consequences. First, as export controls are likely to become more deeply embedded in China's broader security and industrial frameworks, negotiations will not always deliver the desired results – especially if Beijing believes the supply is needed

44 Leahy (2025).

45 European Commission (2026).

46 European Investment Bank (2025).

The REE sector highlights the need for proactive, whole-of-government strategies that combine investment incentives, supply-chain partnerships, technological upgrading, stockpiling and stronger coordination between industrial policy and national security priorities.

internally. Second, although (or perhaps, because) internal resilience remains its foremost priority, China will not easily accept the creation of alternatives to its supply. Despite the year-long pause (until November 2026) on most recent export controls of REEs from China, the developed legal framework will remain and be used not only as means of economic statecraft but as way to ensure self-sufficiency and resilience.

In a future where China increases production of key technologies, it may become increasingly hard to negotiate regular flows of REEs and, more widely, critical minerals from China, let alone a flow needed for stockpiling. While safeguarding internal production and supply, China is likely to continue the expansion of its companies' presence abroad with the double objective of securing supply for its production and hindering the attempts by other countries to diversify from China's supply to maintain a key leverage in its economic statecraft arsenal.

The likely result is increased and fiercer competition between international actors for presence in key areas such as Laos, Myanmar and Madagascar, to mention a few. That will increase competition not only between China and third countries but also among partners. Third countries are catching up, but China seems to still have a clearer grasp of the difference – both in terms of processing and adoption – between light and heavy rare earths.

The REE sector highlights the need for proactive, whole-of-government strategies that combine investment incentives, supply-chain partnerships, technological upgrading, stockpiling and stronger coordination between industrial policy and national security priorities. Private–public collaboration cannot focus solely on monetary incentives. Public backing of private-firm investments and operations can take the shape of diplomatic efforts and offers. The case of Ivanhoe Atlantic in Guinea shows that the backing of the state's foreign policy for the operations

of their companies abroad can lead to results that would otherwise have been more difficult to achieve.[47]

Third and most importantly, as China pushes for more cohesive collaboration with third countries, so should partners, collectively. China is proposing an international agreement especially directed at developing economies to co-develop the sector, in all likelihood to counterbalance third countries' drive to diversify away from China, while ensuring it maintains a supply of required imports.

If the US and Europe want to guarantee the long-term success of their resilience efforts in REE – and more widely in critical minerals – and avoid a race to the bottom that pushes countries closer to China, they too should advance collaborative proposals that go beyond bilateral agreements, which may pit partners against one another and ultimately hinder the resilience of all.

In December 2025, the United States launched its own initiative for international collaboration: Pax Silica. The US-led initiative is aimed at building a secure, resilient, and innovation-driven global silicon supply chain for key technologies: semiconductors, AI infrastructure, critical minerals and advanced manufacturing. It carries a double objective: reducing coercive dependencies (i.e. from China) and strengthening 'trusted' technology ecosystems among partner countries. While it is too soon to assess the initiative, Pax Silica presents several areas that merit careful observation as the initiative evolves.

First, while the framework is ambitious, it has not yet been accompanied by clearly articulated flagship projects. Previous efforts, such as the Critical Minerals Partnership, were launched alongside high-visibility initiatives, though their presence did not necessarily guarantee success. The absence of such projects in Pax Silica does not inherently pose a problem, but it does suggest that analysts and observers will need to monitor how the initiative develops in practice and whether it translates into tangible, coordinated action.

Second, the initiative's operational mechanisms, including how projects might eventually be selected or funded, remain to be fully defined. A clearer framework could help ensure transparency, safeguard against potential misallocation of resources and strengthen confidence that investments align with the initiative's broader strategic objectives.

Finally, although the number of participating countries is expanding, it remains to be seen whether all partners share a fully aligned agenda. It is not clear if the initiative advances US strategic priorities most prominently, which could lead to differing expectations among participants. Ensuring that Pax Silica fosters genuine collective ownership will be important to avoid fragmentation; to promote coherent action across the partnership; and to ultimately ensure the success of the 'trusted' supply chain the United States and partners seek to increase resilience and reduce the space for coercion from third countries. China's trajectory shows that strategic capabilities emerge not from infighting or fragmented reactions, but from sustained, anticipatory statecraft. Meeting the current challenges requires partner governments (Australia, Canada, the EU, Japan, South Korea, the United Kingdom and the United States) to adopt long-term approaches that align innovation, resource diplomacy and industrial development to ensure collective resilience in the face of China's

[47] Pilling & Hook (2025).

increasingly assertive control over the world's rare-earth supply chains, perhaps building on efforts such as the G7 Critical Minerals Production Alliance and the creation of standards for market access.

A system that pursues resilience before weaponisation

China's approach to rare earths is best understood as a long-term effort to build an integrated industrial ecosystem to safeguard and retain resources, as well as increase its global presence – all of which can then be leveraged. By linking extraction to refining, component manufacturing and downstream industries such as electric mobility, defence and renewable energy, China has created a self-reinforcing value chain supported by coordinated state policy, strategic financing and domestic demand. This hybrid model, neither fully top-down nor market-driven, has been sustaining its industrial advantages while ensuring the world's reliance on its production of REEs.

The 2025 expansion of export controls reflects China's willingness to leverage its structural dominance at a moment when global reliance on rare earths is intensifying. The resulting disruptions highlight how decades of regulatory and industrial planning have positioned Beijing at the centre of the global rare-earth system, with consequences that increasingly extend globally. China's leadership identified rare earths as strategic resources as early as the 1970s and reinforced that view in the 1980s, as Western champions traded know-how for cheaper products and the illusion of supply security. Industrial policy followed a well-known pattern: state-backed geological exploration, targeted research funding, controlled collaboration

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with foreign technology holders, protectionist policies, and eventually a sweeping consolidation that placed the entire upstream and midstream sectors under the authority of a small number of state-directed conglomerates. The resulting system has delivered Beijing both industrial self-reliance and the ability to shape global markets. Although this capacity for supply-chain influence rests on a foundation that has been deliberately built over nearly half a century, the United States and Europe have proved largely unprepared for its impact, and are only now taking concrete steps to address the issue. The cost of moving in a non-cohesive manner and late will not be negligeable, and the importance of avoiding the wrong strategies becomes a vital consideration.

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About this paper

China's rare earth elements (REE) policy emerges as a carefully engineered strategy that blends decades old institutional planning with recent assertive measures to secure first and foremost resilience and then dominance across the entire REE value chain. This paper unpacks how Beijing has adapted old pririties to changing internal and external context and fused resource control, collaboration with foreign entities, technological upgrading and geopolitical ambition to build a system that not only shapes global supply chains but also strengthens its leverage over international actors at a moment when global dependence on these critical materials becomes a strategic vulnerability.

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