

Our strategy is to create a competitive advantage so pronounced, so insurmountable, that no adversary or competitor can scale it.

Jacob Helberg

Introduction

The race for AI is often presented as a battle for data or models, but the real limitations are increasingly physical: chips, energy, minerals and supply chains.

In an increasingly fragmented and changing global geopolitical landscape, access to mineral resources and the relocation of value chains have become issues that transcend economic security and are now considered national security assets. For decades, China has been promoting vertical integration—from education to defence, including industry, the economy, diplomacy and R&D&I—of its strategic value chains for its economy and defence. In contrast, Western countries and their liberal economies have opted for globalisation, with the consequent relocation of their production capacity (and also their *know-how*) to countries with lower labour costs and more lax environmental legislation in search of greater economic profit.

The COVID-19 pandemic undermined the advantages offered by globalisation by highlighting the vulnerability of strategic product supply chains to supply disruptions. Today, the advantages of globalisation are being called into question, and both companies and countries are watching with concern the tariff war, export controls on security grounds and the vulnerability arising from extreme external dependence on third countries, such as China, in the face of cuts in the supply of strategic materials.

With the Trump administration, we are witnessing not only a new geopolitical order but also a new global trade order in which uncertainty is becoming the dominant feature. The global economy is undergoing a significant transformation as industrial policy becomes increasingly intertwined with national security strategy. This convergence, driven by geopolitical tensions, supply chain vulnerabilities and technological competition, represents a break with decades of free-market economic policies that prevailed for much of the post-Cold War era¹.

¹ HAUGE, J. et al. "The new economic nationalism: industrial policy and national security in the United States, China, and the European Union," *Geoforum*, Volume 166, 2025.

Judging by President Trump's actions, it seems that the world is moving towards a point of no return, giving way to a new world order that, setting aside Western rules and values, international law and multilateralism, is characterised by an introspective vision.

In this vision, as indicated in the new *US Security Strategy*², economic security and national security converge. In this new scenario, economic activities are viewed through the prism of security, allowing for the implementation of new public policies, tariffs, export controls, subsidies, nationalism and greater protectionism. But it also allows for the establishment of diplomatic relations with new partners, mediation in conflicts in exchange for natural resources, and even justifies the possible annexation of regions of strategic interest.

According to Jamieson Greer³, the United States Trade Representative, the Trump administration's goal is to impose tariffs and seek foreign investment agreements to lay the foundations for this new trade order. The aim is to promote domestic reindustrialisation and job creation, in order to turn the trade deficit into a surplus. In this way, the US will also reduce its dependence on China for strategic goods that are key to the economy, digitalisation and the defence sector.

Trump's response is swift and highly disruptive. The United States needs secure supply chains for strategic goods. However, the imposition of widespread tariffs raises domestic prices and may also alienate foreign partners from domestic industry. In this case, the security costs of protectionism can be very serious⁴. To avoid these problems, the tariff policy is accompanied by new proposals for collaboration with trusted countries (*friendshoring*)⁵ to promote cross-border manufacturing, strengthen supply chains for strategic materials and drive technological innovation.

² MÁRQUEZ DE LA RUBIA, Francisco. The National Security Strategy of the United States (2025): analysis and comparison with the 2022 NSS. Analysis Document IEEE 84/2025.

³ <https://www.nytimes.com/2025/08/07/opinion/trump-trade-tariffs.html>

Note: All hyperlinks are active as of 19 January 2026.

⁴ <https://www.foreignaffairs.com/united-states/new-supply-chain-insecurity-shannon-oneil>

⁵ Friendshoring is a strategy of relocating supply chains to politically allied and economically stable countries, prioritising security and trust over the lowest cost to mitigate geopolitical risks and disruptions, differentiating itself from traditional offshoring (search for low costs) and complementing nearshoring (geographical proximity).

What is Pax Silica?

According to Jacob Helberg, Deputy Assistant Secretary for Economic Affairs in the Trump Administration, "if the 20th century ran on oil and steel, the 21st century runs on computing and the minerals that power it".

In recent months, the Trump administration has launched initiatives to rapidly build the ecosystem needed to maintain its advantage in technologies related to digitisation and AI development in all sectors, from the economy to defence. In some respects, it is as if we are witnessing a competition between China and the US similar to that which took place during the Cold War, although now the focus is mainly on the development of AI⁶.

In July 2025, the Trump Administration published an artificial intelligence action plan entitled *America's AI Action Plan*⁷. The plan's focus is clear: to master this technology in order to gain economic, military and geopolitical advantages to counter China's future dominance in this technological field. In November, Trump launched the *Genesis Mission*⁸ as a dedicated and coordinated national effort to develop a new era of innovation in AI.

Subsequently, following the approval of the new Security Strategy, the Trump Administration has launched the "Pax Silica" alliance, reminiscent of Pax Americana and Pax Romana. As its name suggests, the term 'Pax' comes from the Latin word for 'peace', meaning long-term stability and prosperity, while 'silica' refers to the refined silicon compound that is a key component in the computer chips that power artificial intelligence.

Pax Silica has been presented as a long-term strategic project rather than a short-term trade agreement. With it, Trump aims to create an association of like-minded countries for a coordinated response to China's rapid advances in AI, semiconductor development and other critical technologies. It also seeks to reduce the vulnerability posed by Chinese dominance in the supply chains of key goods for its development, including strategic minerals. This alliance demonstrates the Trump administration's growing recognition of the direct *link* between technological superiority, national security and economic sovereignty.

⁶ <https://www.foreignaffairs.com/united-states/myth-ai-race>

⁷ Available at: <https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf>

⁸ Available at: <https://www.whitehouse.gov/presidential-actions/2025/11/launching-the-genesis-mission/>

For Helberg, this group of countries will be to the AI era what the G7 was to the industrial era. It is an industrial policy geared towards an economic security coalition and represents a turning point, as there is currently no group addressing the economics of AI and how to compete with China in this area. The member countries are committed to a process whereby they will cooperate to align their export controls, evaluate foreign investments, address *anti-dumping* measures and reduce coercive dependencies. The aim is to promote a highly proactive agenda to secure the critical points of the global supply chain system⁹.

The first Pax Silica summit took place on 12 December 2025 and was attended by representatives from Canada, the Netherlands, the United Arab Emirates, as well as other delegates from the EU and the OECD. The first countries to join the initiative were Japan, Australia, Singapore, South Korea, the United Kingdom and Israel. Qatar and the United Arab Emirates have since joined, and India is likely to join in the coming weeks. It cannot be ruled out that Trump may invite other countries to join the alliance in the future.

At present, the nine countries participating in the initiative broadly cover the capabilities needed to rapidly advance research, development and supply of semiconductors and related materials. Together, these countries, along with Taiwan and the Netherlands, form the pillars of the semiconductor and AI supply chain, as they are home to major companies such as Sony, Hitachi, Fujitsu, Samsung, SK Hynix, Temasek, DeepMind, MGX and Rio Tinto.

Pax Silica can be defined as an economic security coalition created for the AI era. The global AI market is expected to grow from \$131 billion in 2024 to \$642 billion in 2029, driven by a rapidly expanding ecosystem of integrators, *start-ups* and technology leaders¹⁰.

This is the first time that countries have organised themselves around computing, semiconductors, minerals and energy as shared strategic assets. On the one hand, Japan has leading initiatives in AI algorithms and semiconductor design, and is an example of how it has managed to reduce its dependence on rare earths from China, from 90 per cent to 60 per cent of imports¹¹. South Korea can contribute by expanding its semiconductor manufacturing capacity.

⁹ <https://www.politico.com/news/2025/12/11/trump-enlists-5-allies-to-counter-china-on-rare-earths-and-tech-00688068>

¹⁰ *Tech Predictions 2026 Report: Strategic Intelligence*. GlobalData.

¹¹ <https://www.asahi.com/ajw/articles/16278953>

For its part, Singapore can become the 'trusted node' that the United States is seeking to anchor the supply chains of the AI era¹². Singapore offers strong governance, regulatory credibility, capital markets, logistics, and advanced data centre infrastructure and connectivity.

Australia can provide access to critical minerals and AI research partnerships, and the United Kingdom is driving innovation in advanced materials and AI *hardware*. In addition, it can play a very important role in the strategic minerals market, thus avoiding price vulnerability. For its part, Israel, a traditional ally of Trump, has AI-enabled cybersecurity applications and expertise in secure technologies.

As far as the United Arab Emirates and Qatar are concerned, both countries provide three key elements that Trump needs: financing, energy and location. These countries could be key to addressing, for example, the financing issues involved in exploring and developing new mining projects, supply chains or building data centres. In terms of energy, data centres consume huge amounts of energy and demand is expected to increase significantly in the coming years¹³. Both Qatar and the Emirates are among the largest producers of fossil fuels and have the highest projections for renewable energy¹⁴. In terms of location, both countries can play a key role in AI-related logistics.

Among those absent from Pax Silica, Taiwan, the world's leading producer of semiconductors, stands out. The reasons given are that Taiwan and the US have formed a Bilateral Economic and Prosperity Dialogue and that for the time being it is better to leave relations within this bilateral framework rather than the multilateral one offered by Pax Silica¹⁵. However, it can be assumed that Taiwan's delicate situation in relation to China has made it preferable to keep it out of the initiative.

The EU, although present at the launch of Pax Silica, is not part of the initiative and, in the short term, does not seem a likely option either. The reasons given by the Trump administration are differences in how to approach cutting-edge technologies, especially software and artificial intelligence, mainly because they consider that the EU encourages excessive regulation¹⁶.

¹² <https://fortune.com/2025/12/30/why-singapore-is-the-only-southeast-asian-country-in-pax-silica-ai/>

¹³ <https://www.iea.org/reports/energy-and-ai/energy-demand-from-ai>

¹⁴ <https://www.state.gov/remarks-on-the-accession-of-qatar-to-the-pax-silica-declaration/>

¹⁵ <https://www.state.gov/releases/office-of-the-spokesperson/2025/12/pax-silica-initiative>

¹⁶ <https://www.state.gov/digital-press-briefing-under-secretary-of-state-for-economic-affairs-jacob-helberg/>

However, the Netherlands is on Trump's radar to join the initiative, as it plays a prominent role in chip technology and manufacturing¹⁷. In addition, the Netherlands is home to ASML Holding N.V., possibly the largest company dedicated to the development, production, marketing and sale of advanced semiconductor *hardware*. ASML has a monopoly on the supply of extreme ultraviolet (EUV) lithography machines, which are essential for manufacturing the most advanced chips, designed by companies such as Nvidia and AMD, and produced by chip manufacturers such as TSMC, Intel and Samsung.

Challenges for Pax Silica

Time

The Pax Silica Initiative aims to become the definitive formula with which Trump seeks to remain a leader in AI technologies. But time is not on his side, as China is making significant advances in this field and also has a virtual monopoly () on both the production and processing of critical mineral raw materials necessary for digitalisation and AI, as well as clean energy technology.

¹⁸Pax Silica is primarily an alliance of capabilities, and these may not be developed at the necessary and desired speed. At present, US companies design the world's most advanced AI chips, mainly through Nvidia. The United States is also well ahead of China in terms of AI data centres. US companies control approximately 70% of global AI computing, while Chinese companies control around 10%. This capacity allows US companies to train larger and more capable models¹⁹.

In October, the Trump Administration decided to approve certain exports of Nvidia chips to China, framing this measure as part of a broader push to maintain US leadership in innovation and ensure global technology diffusion. According to Helberg: "Winning the AI race requires two conditions: the best innovation and the widest dissemination"²⁰. For now, the US administration has struck the right balance by continuing to allow the export of

¹⁷ Ibid.

¹⁸ MÁRQUEZ DE LA RUBIA, F. "The battle for technological supremacy. US vs China" Chapter 12, Geopolitical Overview of Conflicts, 2024. <https://www.defensa.gob.es/ceseden/-/panorama-geopol%C3%ADtico-de-los-conflictos-2024>

¹⁹ <https://www.foreignaffairs.com/united-states/myth-ai-race>

²⁰ <https://www.kyivpost.com/post/66464>

Nvidia's H200 Series chips to China, which are not the latest generation, with the aim of financing the development of new chips²¹ .

However, it should be noted that, following the granting of permission to export Nvidia chips, the main objective has been to get China to lower the latest export controls on rare earths implemented in early October, which dealt a severe blow to the US technology sector.

Therefore, chips and rare earths have become two weapons in the tactical balance between the US and China. The race for technological leadership is about being first to dominate both sectors, and that takes time.

China is advancing by leaps and bounds²²

In recent years, restrictions on the export of advanced AI chips and semiconductor manufacturing equipment have made it difficult for Chinese companies to acquire or produce sufficient quantities of cutting-edge chips, keeping China two generations behind in chip technology²³ . These difficulties have slowed the country's ability to create the computing power needed to train and implement the most advanced models.

Even so, the Chinese semiconductor industry has made significant progress over the past decade and has succeeded in manufacturing some chips. Huawei's Ascend 910 series — the best Chinese semiconductors — perform at 60% to 70% of the level of Nvidia's H100 or H200. However, Huawei can only manufacture hundreds of thousands of them, while Nvidia currently produces and exports millions of much more powerful AI chips each year²⁴ .

Nvidia currently holds about 90% of the AI chip design market, but faces growing competitive pressure. Major customers are diversifying their offerings and driving multi-billion pound investments in alternative AI accelerators. This shift is expected to intensify competition, drive down chip prices, and accelerate innovation in AI *hardware*. As a result,

²¹ <https://www.kyivpost.com/post/66464>

²² MÁRQUEZ DE LA RUBIA, F. "The battle for technological supremacy. USA vs China" Chapter 12, Geopolitical Overview of Conflicts, 2024. <https://www.defensa.gob.es/ceseden/-/panorama-geopol%C3%ADtico-de-los-conflictos-2024>

²³ <https://www.csis.org/analysis/where-chips-fall-us-export-controls-under-biden-administration-2022-2024>

²⁴ <https://www.cfr.org/article/chinas-ai-chip-deficit-why-huawei-cant-catch-nvidia-and-us-export-controls-should-remain>

Nvidia's market share is projected to decline by 2026 as competitors gain ground and new designs enter the market²⁵.

Meanwhile, at the Shenzhen Laboratory, Chinese scientists have built a prototype EUV machine²⁶ capable of producing cutting-edge semiconductor chips. This milestone has been achieved thanks to the work of a team of former engineers from the semiconductor company ASML²⁷, indicating how vulnerable technology companies can be to brain drain and espionage.

The Chinese machine is operational and successfully generating extreme ultraviolet light, but has not yet produced functional chips. This breakthrough by China marks the culmination of a six-year government initiative to achieve self-sufficiency in semiconductors, one of President Xi Jinping's top priorities²⁸.

Although China's semiconductor goals have been public, the EUV project in Shenzhen has been carried out in secret, resembling what was once the US Manhattan Project.²⁹ Although ASML considers developing this technology to be very difficult as it takes years, Chinese forecasts suggest that it could match the West in chip manufacturing by 2030, much sooner than analysts had anticipated³⁰.

Obtaining the necessary critical minerals and processing them

²⁵ https://www.globaldata.com/store/report/tech-predictions-theme-analysis/?CampaignValue=701Ti00000O4rb3IAB&utm_medimu=one-shot&utm_campaign=qd-rs-tech-predictions-theme-analysis_15-12-2025&hsenc=p2ANqtz-qPKHt_qxRnq1sqFkEK9eflIoHtyyX2MHSHckeOjkmX5KDoNyc1Bq3UXFggfwAOesDMfAn070W71sQj1kPPqJ2bMWLA&hsmi=124017427&utm_source=email

²⁶ They use extreme ultraviolet light beams to etch circuits thousands of times thinner than a human hair onto silicon wafers, a capability currently monopolised by the West. The smaller the circuits, the more powerful the chips.

²⁷ <https://techcentral.co.za/china-races-to-crack-euv-lithography-as-chip-war-with-the-west-intensifies/275733/>

²⁸ <https://www.eetasia.com/china-semiconductor-markets-pivotal-moment/>

²⁹ <https://www.reuters.com/world/china/how-china-built-its-manhattan-project-rival-west-ai-chips-2025-12-17/>

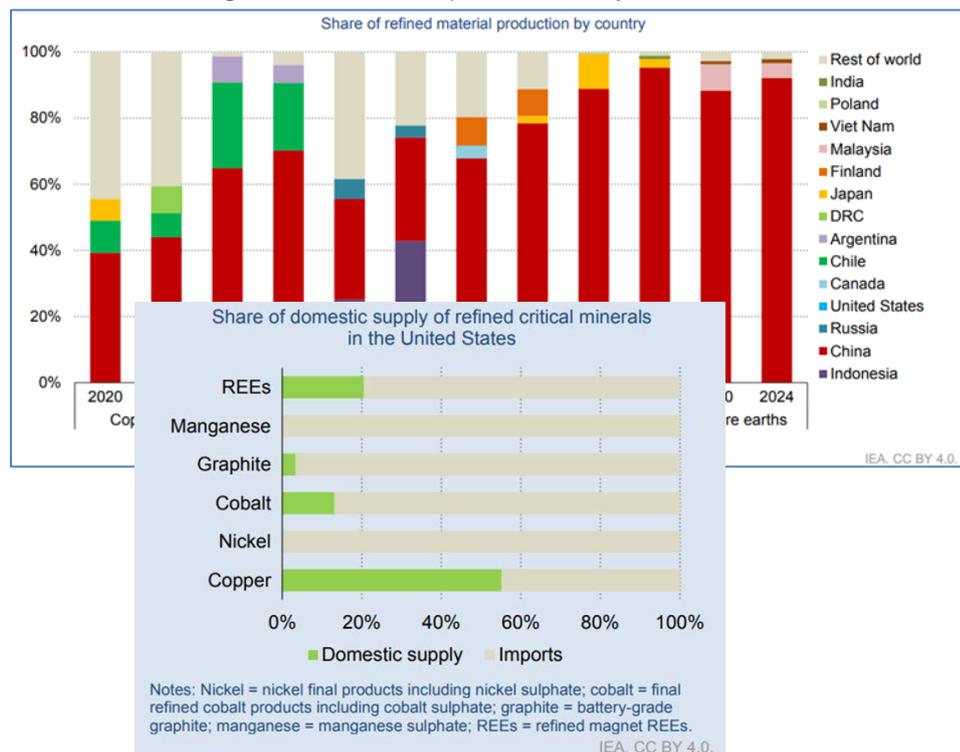
³⁰ Ibid.

While China is a little closer to self-sufficiency in semiconductor manufacturing, the US is still a long way from being independent of China in terms of access to critical minerals and their processed materials, without which it is not feasible to develop the potential of AI.

Share of domestic supply of critical minerals refined in the US. Source: IEA

The lack of access to certain minerals produced and processed by China has become a serious concern for the global technology industry, and in particular for the US, which considers it a matter of national security. China controls approximately 60% of global rare earth mining and 85% of the processing capacity for materials needed to manufacture chips and batteries³¹. The United States imported 80% of the rare earths it used in 2024³².

The coercive use of exports of these metals has been a recurring practice by China for some time. In 2010, it restricted exports of rare earths to Japan in retaliation for an incident between a Chinese fishing boat and a Japanese navy vessel near the Senkaku Islands,



which are disputed by both countries. Since then, control of elements such as gallium, germanium, antimony, graphite and rare earths has been part of China's bargaining chip against export controls imposed by the US or the EU, with devastating consequences for technology sectors related to digitalisation, clean energy, AI and defence.

³¹ <https://www.mining-technology.com/analyst-comment/china-global-rare-earth-production/?cf-view>
³² https://www.statista.com/chart/34301/us-rare-earth-imports/?srsIid=AfmBOooABGQeq6BX_hITrS-nOA5IXKbXE39D801I2kbxZFdZM2oeghtE

Share of refined material production by country. Source: IEA

During 2025, restrictions on critical minerals increased as Trump imposed his aggressive tariff policy. In April 2025, Beijing imposed export controls on seven types of rare earth elements and their magnets in response to Trump's tariffs on Chinese products. The move quickly disrupted global supply chains in key industries such as automotive and defence, highlighting their lack of preparedness for such sudden supply cuts.

Again in October 2025, China reacted to Trump's restrictive trade policies by adding five rare earth elements to its existing control list. The new restrictions included holmium, erbium, thulium, europium, ytterbium and related magnets and materials, all of which required export licences.

China's reaction caused such concern in US technology industries that Trump reached an agreement with Xi Jinping in South Korea during his trip to Asia. Among other things, the two leaders agreed to reduce tariffs on Chinese products, which stand at 45%; the export of Nvidia's H200 series chips; the lifting of the latest restrictions on rare earth exports, established in October by China; and the resumption of chip shipments from Nexperia's facilities in China³³. All this, with a time frame of one year. With this truce, Trump has halted what would have been a disaster for his industry.

In recent years, the US has attempted to gain access to critical mineral resources, either by granting subsidies and grants for domestic production, through peace agreements such as those reached with Ukraine and the Democratic Republic of Congo, or by participating in multilateral initiatives such as the Minerals Security Partnership (MSP), or by reaching bilateral agreements—such as those recently signed with Japan, Australia, Malaysia, and Thailand—or by directly attempting to gain control of regions rich in these types of resources, such as Greenland.

The vulnerability of the critical minerals supply chain for the US is a matter of national security. Trump has resorted to unorthodox actions from a liberal standpoint. In July, the Department of Defence became the largest shareholder in MP Materials, the operator of the Mountain Pass mine in California, the only mine currently extracting rare earths in the

³³ <https://www.whitehouse.gov/fact-sheets/2025/11/fact-sheet-president-donald-j-trump-strikes-deal-on-economic-and-trade-relations-with-china/>

US. The idea is to open a new plant, called 10X, to manufacture neodymium-praseodymium (NdPr) magnets. The plant is expected to begin operations in 2028 and increase the company's total magnet production capacity to about 10,000 tonnes per year. The agreement also guarantees that 100% of the magnets produced at the new 10X facility will be purchased for use in defence and commercial applications for a decade after it becomes operational, as well as a minimum price of \$110 per kilogram for neodymium-praseodymium (NdPr) materials³⁴.

In addition to exploiting domestic resources, access to new deposits and new mineral processing systems is vital to meeting US demand for minerals in clean energy, the digitalisation of economies, and the defence and aerospace sectors. For this reason, critical minerals are a fundamental pillar of Pax Silica. But again, time is not on Trump's side, as a mining project, once proven viable, can take 10 to 15 years to become productive. Furthermore, it is very costly and, in certain areas, faces opposition from local populations on environmental grounds.

The financing provided by Qatar and the Emirates will enable Trump to finance mining projects from the initial exploration phase, which is usually carried out on a largely non-recoverable basis if the results are not satisfactory. Australia's experience as a mining powerhouse will also be key to the success of Pax Silica. On the other hand, one of the great achievements of this initiative would be to eliminate the risk of mineral price volatility in order to give consistency and continuity to mining projects, both current and future.

Trump recently decided not to impose tariffs on rare earths, lithium and other critical minerals. He has also put his allies and trading partners on alert, warning global suppliers to negotiate agreements to ensure reliable and diversified supplies for the United States. Both Jamieson Greer and Howard Lutnick have been mandated to negotiate new agreements, or expand existing ones, to encourage imports of processed critical minerals and their derivative products. Negotiators have 180 days—until 13 July—to reach binding agreements that guarantee the supply of critical minerals. One of the key issues will be pricing. The aim is to put an end to one of the biggest problems in mining, namely price volatility, and to tackle opaque markets and the practices of Chinese companies, which

³⁴ <https://www.mining.com/mp-materials-lands-multi-billion-pentagon-deal/>

have continued to mine even when prices are significantly below production costs, thereby driving competitors out of the market³⁵.

Conclusions

The creation of international supply chains creates economic dependencies on foreign countries, and these dependencies can sometimes be dangerous. Trump therefore aims to reduce vulnerabilities by excluding unfriendly countries from supply chains critical to US national security.

With the Pax Silica initiative, Trump aims to establish partnerships with countries that contribute to strengthening his independence from China in certain strategic materials and advancing technological development. China is making great strides in quantum technology, AI and semiconductor development, so it is possible that these achievements will come sooner than expected.

Pax Silica reflects a common idea shared among allied nations that are part of it: economic security is national security. It brings together nine key nations: the United States, Japan, South Korea, Singapore, the Netherlands, the United Kingdom, Israel, the United Arab Emirates (UAE) and Australia.

The novelty of Pax Silica lies in the fact that it is a multilateral, capability-based alliance to collectively secure the strategic foundations of the digital economy. It is designed to reduce coercive dependencies, protect sensitive technologies critical to AI, and ensure that next-generation digital infrastructure is developed within trusted technology ecosystems.

Pax Silica is a technological alliance, but also a geopolitical one, as current and future member countries must be aligned with broader geopolitical interests. After all, one of Trump's objectives in formalising this alliance is to counter China's influence amid growing strategic competition between the two countries, which requires political loyalty. As the initiative progresses, it will become clear what actions the allies will take, what they will have to give up and what return they will get from this new geopolitical alignment.

³⁵ <https://www.hinrichfoundation.com/research/article/trade-and-geopolitics/us-puts-price-floor-against-china-rare-earth-dominance>

For now, the initiative is a declaration of shared principles—still without an implementation mechanism—on which future cooperation will be based. Pax Silica aims to move towards integration so as not to remain a mere minilateral cooperation. To strengthen it, the initiative could become an international treaty, thereby integrating it into the regulatory framework of the United States and the member countries.

China's response to the initiative has been cautious, urging all parties to adhere to the principles of a market economy and fair competition and to work together to maintain the stability of the global supply chain³⁶.

As for the possible incorporation of the EU into the initiative, this is not currently being considered due to the US's disagreement with regulatory restrictions related to AI. Furthermore, with such important issues as the Greenland affair, in which both powers have opposing objectives, this is not the most appropriate time.

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³⁶ <https://www.globaltimes.cn/page/202512/1350398.shtml>