Evolution of the Global Critical Mineral Discourse System and China's Strategic Responses

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1 Analysis of the Critical Mineral Discourse Characteristics in Major Economies and Policy Implications

1.1 The United States

(1) The discourse characteristics

The critical minerals narratives of the United States (U.S.) are structured around three interconnected axes — security, industry, and sustainability — forming a risk-driven discourse framework that underpins its overall strategic logic. On the one hand, it generates a sufficient sense of urgency for policy and alliance actions by continuously emphasizing supply chain vulnerabilities, geopolitical competition, and threats to industries. On the other hand, it presents technological innovation, domestic manufacturing, and green governance as response solutions, giving the entire strategy a clear direction and strong mobilization capacity. Its evolutionary trend is characterized by a shift from risk management to alliance collaboration, and further advancing towards legislative enforcement and localized implementation. The high degree of subjectivity combined with moderate-to-low sentiment intensity in the U.S. discourse enables it to project assertiveness in shaping external rules, while remaining pragmatic and execution-focused in advancing domestic policy — ultimately forming a narrative structure that begins with crisis framing and culminates in strategic signaling.

(2) Policy implications

The U.S. critical mineral discourse demonstrates a complete strategic narrative chain: forging consensus through risks, building confidence through technologies, expanding reach through alliances, and securing advantages through rules. For China, the first step is to seriously confront the international public opinion landscape shaped by the U.S. through its narrative of "supply chain vulnerability". This is not merely a complaint but a continuously effective policy engine that enables the U.S. to dominate agenda-setting in global critical mineral governance. China must avoid being excessively passive in its international communication and, instead, construct a

narrative framework with a clear vision, a more positive sentiment expression, and a stronger orientation toward cooperation, so that the outside world recognizes China not only as a supplier but also as a contributor to governance.

Secondly, the U.S. has placed the breakthrough for critical mineral security on strengthening its technological system and promoting domestic manufacturing. This reminds us that relying solely on the resource or trade end is difficult to secure a long-term and stable position; breakthroughs in the technological chain must genuinely translate into structural advantages within the industrial chain. Only by truly developing systematic capabilities in deep processing, high-end materials, critical equipment, and recycling technologies can China's weight in the supply chain become irreplaceable.

Finally, by leveraging its highly subjectivity discourse, the U.S. continuously promotes a comprehensive set of "American standards" that spread outward and gradually shape governance rules. China should take a more proactive stance in international mechanisms, staking out the discourse space with governance proposals that are well-evidenced, readily verifiable, and easily replicated. By demonstrating measurable green governance and responsible supply chain practices, China can show the feasibility of its approach to the international community, rather than being passively incorporated into the rule systems of other countries.

1.2 The European Union

(1) The discourse characteristics

The discourse of the European Union (EU) exhibits a distinct institutional character, generally demonstrating a normative orientation that advances in tandem with "rules - strategy - green" initiatives. Its core objective is to compensate for its inherent resource-related weaknesses through legislative, regulatory, and standard-setting systems, thereby forming a discourse structure driven by norms. Its evolutionary trend reflects a progression from risk consensus to rule-building, and further towards the implementation of rules and global competition. In terms of the sentiment orientation, it generally exhibits a moderately intense, slightly positive, and rational stance, with a high level of subjectivity, emphasizing clear and stable expressions of value positions. Although its discourse explicitly incorporates normative judgments, it does not resort to sentiment confrontation but instead relies on technical standards and institutional design to convey these ideas, thereby achieving a balance between value orientation and procedural rationality. At its core, this reflects a governance logic of "building influence through standards and shaping the external environment through institutional export".

(2) Policy implications

The challenge posed by the institutionalized expressions of the European Union to China does not lie in the intensity of its discourse, but rather in its "enforceability" — once relevant

bills and standards are implemented, they often effectively set global compliance thresholds. When facing the European Union, China should not only focus on the exported concepts but also truly understand the regulatory chains they generate, and proactively undertake institutional pre-adaptation in advance. For enterprises, this means establishing processes, data, and evidence chains that align with EU standards as early as possible; for government departments, it requires building a normalized evaluation system to promptly identify the specific impacts of EU regulations on trade and industries.

At the same time, interactions with the EU should not remain at the level of "passive alignment." China has already established a practical foundation in green mineral governance, low-carbon technologies, and product lifecycle management (PLM), enabling it to propose more verifiable Chinese solutions. Supported by specific regulations, technological pathways, and third-party certifications, these solutions can enhance the professionalism and persuasiveness of China's discourse. The ultimate goal is not to counterbalance the EU, but to enable China to become a "co-builder of rules" in multilateral settings and provide alternative global public goods in certain fields.

1.3 Japan

(1) The discourse characteristics

Japan's critical mineral discourse is highly restrained, generally presenting a corporate-embedded discourse structure that synergistically advances along the dimensions of "strategic security - green standards - technological industry". Its prominent feature lies in the high degree of coupling between corporate behaviors and national strategy, reinforcing strategic security through the integration of technological industrialization and green standards. The core logic is to leverage technological substitution, the circular economy, and urban mining systems to alleviate inherent resource deficiencies, thereby providing a stable foundation for the long-term competitiveness of the manufacturing sector. Its evolutionary path is characterized by risk perception driving the embedding of norms, ultimately achieving technological implementation and enhancing supply chain resilience. Both its sentiment polarity and levels of subjectivity rank among the lowest among major economies, presenting an overall narrative style that is highly restrained, de-emotionalized, and emphasizes technological rationality and evidence-based support. Its discourse system, on the one hand, continuously emphasizes the identification and management of external supply risks, while on the other hand, highlights the long-term layout for internal technological system integration and institutional coordination. The core logic lies in systematically addressing structural deficiencies in resource endowments through technological accumulation, efficiency enhancement, and the construction of a resource recycling system.

(2) Policy implications

Japan's discourse approach reminds us that technological pathways may reshape the global mineral demand structure in the future. If breakthroughs continue in alternative materials, advanced recycling, and high-end material R&D, some countries that originally relied on imports may gradually reduce their demand for traditional raw ores, thereby altering the global market landscape. This presents both competitive challenges and a forcing mechanism for China to drive technological upgrades.

In terms of external communication, Japan's technology-oriented narrative approach offers valuable lessons. In international rule-making, trade disputes, or supply chain negotiations, mere political rhetoric is insufficient to win trust; transparent data, reproducible and verifiable technical arguments, and clear indicator systems are more likely to garner cross-border recognition. Meanwhile, Japan's long-term investment in circular systems also reminds us of the need to intensify efforts in recycling technologies and policy frameworks to create strategic buffers on the supply side, ensuring that China is no longer passively reliant on overseas mineral sources.

1.4 Australia

(1) The discourse characteristics

Australia's critical mineral discourse generally exhibits a strategic orientation that advances concurrently along the dimensions of "global supply - green transition - risk management". Rooted in its resource endowments, international markets, and partnership cooperation, this approach bears distinct characteristics of a resource-rich nation — open, confident, emotionally positive, and strongly market-oriented. Its focus lies in reinforcing the image of a "stable supplier" by attracting investment through preferential policies, expedited approvals, and industrial chain extension, while leveraging cooperation with the U.S., Europe, and Japan to enhance its strategic position. This discourse system is essentially an outward-oriented strategy integrating "resources - markets - geopolitics", aiming to establish its pivotal role in the global supply system for new energy materials through international collaboration. Its evolutionary trend is characterized by a shift from attracting investment and identifying potential to fostering partner collaboration, and further advancing toward efficiency optimization and supply chain resilience. Its sentiment polarity ranks among the highest among major economies, presenting an overall narrative orientation that is markedly optimistic and proactive, demonstrating a high degree of confidence in resource potential and market prospects. Meanwhile, its subjectivity remains relatively moderate, with positive expectations conveyed more through objective descriptions of resource endowments, investment environments, and supply capabilities. This sentiment structure reflects Australia's external narrative logic centered on the "convertibility of resource advantages", wherein it reinforces its image as a reliable supplier through positive sentiment polarity while maintaining rational expressions of technology and policy.

(2) Policy implications

This narrative style implies that Australia's proactivity in the global supply system will continue to grow in the future, rather than merely being content with exporting raw ores. In China's cooperation with Australia, it is essential to pay attention to non-economic factors such as public opinions, policy sentiment, and community relations, as these often determine the stable progress of projects. Chinese enterprises operating in Australia should enhance their localized operational and the ESG (Environmental, Social, and Governance) governance capabilities to mitigate costs arising from policy fluctuations.

Meanwhile, China needs to further advance supply chain diversification. Establishing a more robust resource layout in Africa, Latin America, Central Asia, and other regions is not only about supplementing supply sources but also crucial for enhancing international negotiation capabilities. In response to Australia's "proactive - optimistic" external narrative, China should concurrently strengthen its messaging of "win-win, sustainable, and long-term cooperation" in international communication, demonstrating cooperation outcomes to enhance its international credibility and advantage in public opinions.

1.5 China

(1) The discourse characteristics

China's critical mineral discourse presents a nationally embedded structure characterized by the coordinated development of "strategic coordination - security prioritization - full-chain advancement", embodying a robust, pragmatic, and systematic style that positions it as a builder of a stable and pragmatic system. Through strategic planning, breakthroughs in mineral exploration, collaborative domestic and international supply chains, technological innovation, and full-chain industrial development, China has constructed a systematic strategic narrative. Its discourse emphasizes national security, the development of strategic emerging industries, and global cooperation as primary objectives, reflecting a forward-looking and systematic strategic layout. Its evolution follows the trajectory of "strategic consolidation - green transition - global leadership", aiming at industrial upgrading and global leadership. Both its sentiment polarity and subjectivity remain at a moderate range, reflecting an sentiment structure characterized by "progressing steadily with restraint and rationality". This configuration of the medium sentiment and subjectivity enables the discourse to emphasize strategic confidence while proactively incorporating real-world challenges such as rising resource security pressures, increasing uncertainties in the international environment, and the ongoing need for breakthroughs in critical technologies. It embeds risk awareness within a strategic narrative centered on long-term institutional development and capacity enhancement.

(2) Policy implications

The most pressing challenge China faces in the field of critical minerals is ensuring alignment between its strategic objectives and its resource security capabilities. As industrial

development accelerates, supply-side support must keep pace to prevent critical links from being constrained by external dependencies. Looking ahead, it is essential to carefully coordinate the timing of resource acquisition, processing capacity expansion, technological R&D, and overseas strategic deployment, so that the entire strategic chain forms a stable and self-reinforcing loop.

Moreover, Chinese enterprises operating overseas must further strengthen institutional and compliance capabilities. With rising international expectations regarding ESG, community governance, and environmental protection, a country's institutional stability shapes its global reputation and trustworthiness. By leveraging institutionalized mechanisms, maintaining a complete chain of evidence, and practicing transparent governance, China can project a responsible and credible international image.

At the level of rules and discourse, China should go beyond merely interpreting policies and actively position itself as a provider of global standards, contributing constructively to the formulation of rules in critical mineral governance. Whether in green mining governance, supply chain reliability systems, or cross-border certification mechanisms, China can spearhead pilot initiatives, provide relevant data, and promote their adoption through multilateral platforms, thereby establishing an institutional presence in global governance. This strategy can support China's transition from a major resource-holding country to a global leader in shaping mineral governance rules.

2 Comparative Analysis of Critical Mineral Discourse Characteristics in Major Economies and Policy Implications

2.1 Common characteristics and policy implications

2.1.1 Common characteristics

(1) Security-oriented narratives serve as the common strategic starting point for major economies

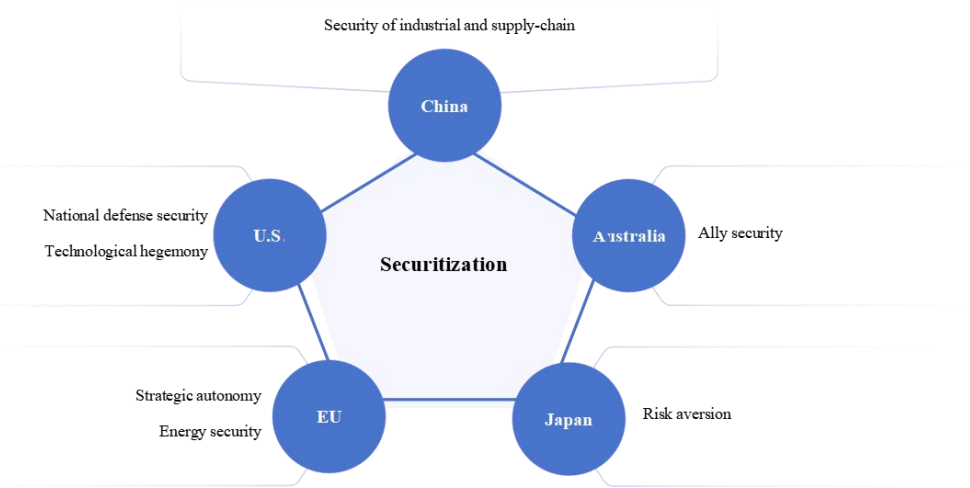

Figure 1 Common Characteristics of Critical Mineral Discourse Among Major Economies - Securitization

Against the backdrop of intensifying geopolitical competition and rising supply chain risks, the security-oriented narrative has emerged as a common starting point for economies to redefine the strategic significance of critical minerals, strengthen policy legitimacy, and enhance mobilization capabilities. The U.S. has advanced its strategy along the dual lines of "national defense - technology", integrating minerals into its national strategic security framework. The European Union, focusing on "strategic autonomy" and "energy security", is reshaping its supply chains. Japan, given its high dependence on imports, has constructed a prudent and pragmatic security narrative centered around "vulnerability management". Australia, despite its abundant resources, serves the security needs of its allies by positioning itself as a "reliable supplier". China, on the other hand, prioritizes "the security of industrial and supply chains", balancing self-sufficiency with international cooperation. Despite different starting points, all economies are reinforcing the legitimacy of their policies through security-oriented language and providing a common narrative framework for supply chain restructuring.

(2) Green transition has become the universal theme in critical mineral discourse

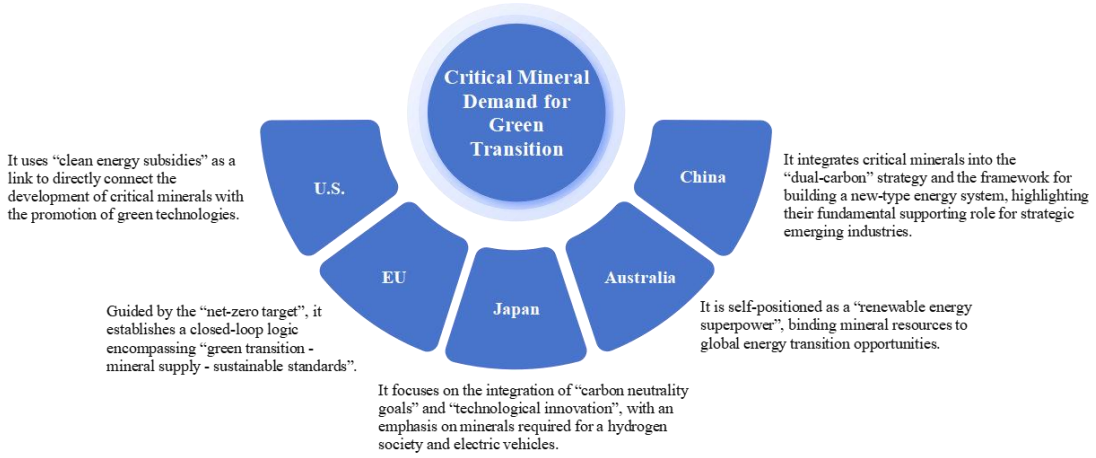

Figure 2 Common Characteristics of Critical Mineral Discourse Among Major Economies - Green Transition

Centered around the new energy transition and the "dual carbon" goals, the narrative of green transition has been widely integrated into the critical mineral discourse system, forming a prevalent logic of "green transition driving demand - resource constraints fueling competition". This has elevated the issue from a mere resource concern to a core fulcrum for global industrial competition and rule-based game. The U.S. steers green supply chains back home through subsidy mechanisms. The European Union establishes an advantage in industrial rules through its green standard system. Japan emphasizes technological innovation and recycling to support its

decarbonization pathway. Australia seeks to leverage its resource endowments to strengthen its supply role in the global green transition. China, driven by its "dual carbon" goals, advances the construction of green mines, low-carbon smelting, and a circular economy. The widespread adoption of green narratives has transformed critical minerals from "traditional resources" into a strategic starting point for global energy transition competition, propelling green rules to become a crucial arena for future international rivalry.

(3) Sentiment tends to be cautious and restrained, with narrative styles becoming more rational and steady

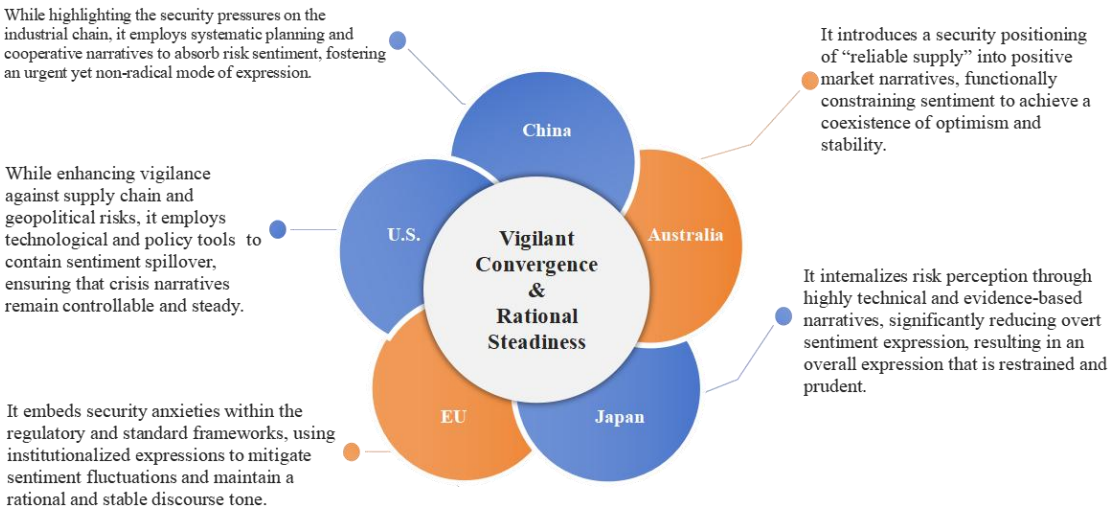

Figure 3 Common Characteristics of Critical Mineral Discourse Among Major Economies - Caution and Steady

In terms of the sentiment orientation, major economies generally exhibit expression characteristics of "high vigilance - low extremism". Regarding supply chain risks, external dependencies, and geopolitical uncertainties, although negative vocabulary is frequently used, the overall narrative remains relatively restrained. They construct policy credibility through rational language and maintain the stability of policy tones. As institutional frameworks continue to improve, sentiment expressions across economies have shifted from periodic fluctuations to a more restrained and standardized sentiment framework, resulting in a prevalent political and urgent yet steady tone in the discourse surrounding critical minerals.

2.1.2 Policy implications

(1) Establish a multi-level, systematic national discourse on mineral security, strengthening external perception guidance and internal strategic coordination

The global trend toward security-oriented discourse indicates that critical minerals have become a key component of national security. For China, there is a need to further develop a structured and hierarchical narrative system on security. Internally, China strengthens strategic

coordination through a three-tier framework encompassing “domestic supply - overseas deployment - supply chain operation”. Externally, it mitigates external narratives that label China by cultivating images such as a “stable supplier” and a “responsible major power”. The key lies in creating synergy between security narratives and policy planning, industrial deployment, and diplomatic mechanisms, thereby constructing a strategic expression system that seamlessly integrates narratives with institutional frameworks.

(2) Develop a green critical mineral discourse guided by the “dual-carbon” goals, enhancing China’s role and voice in global green governance

Green narratives have become the main axis of global competition. China needs to integrate the “dual carbon” goals, new-quality productive forces, green supply chains, and critical mineral governance into a comprehensive expression system, enhancing the international dissemination and industry-leading influence of green standards. Particularly as the EU, the U.S., and Japan export their green standards, China needs to expedite the establishment of its own green mining industry standards, encompassing green development, low-carbon smelting, and full lifecycle management, so that it will no longer passively adapt to foreign frameworks in the global competition for green rules. Meanwhile, China should emphasize its contributions to green technology and global emissions reduction, promoting the integration of its “green minerals - clean technology - global emissions reduction” approach into the international discourse system. This will enable critical minerals to serve as evidence of China’s role in facilitating green transition, rather than merely being seen as a “resource supplier”, thereby securing institutional initiative in future competition over green rules.

(3) Enhance discourse and sentiment management for international audiences to build a stable, credible, and communicable national image

The sentiment characteristics of global critical mineral discourse indicate that international audiences are more inclined to accept a rational, steady, and low-conflict narrative style. For China, it is necessary to reduce reactive and sentiment rhetoric in external communications, shifting towards a more objective, data-driven, and evidence-based approach that emphasizes cooperation, transparency, responsibility, and contributions. Meanwhile, China should enhance its capabilities in digital visualization, data-driven argumentation, and evidence-based storytelling in international communications, presenting a more objective, verifiable, and communicable style of discourse. This will help mitigate external stereotypes such as “strategic anxiety” and the “geopolitical instrumentalization” of resources. By adopting a stable and professional narrative tone, China can enhance international perceptions, improve external assessments of the stability of its supply chains, and create a more favorable public-opinion foundation for future international cooperation and rule negotiations.

2.2 Core divergences and policy implications

2.2.1 Core divergences

(1) Fundamental divergence in strategic positioning: goals are inherently irreconcilable

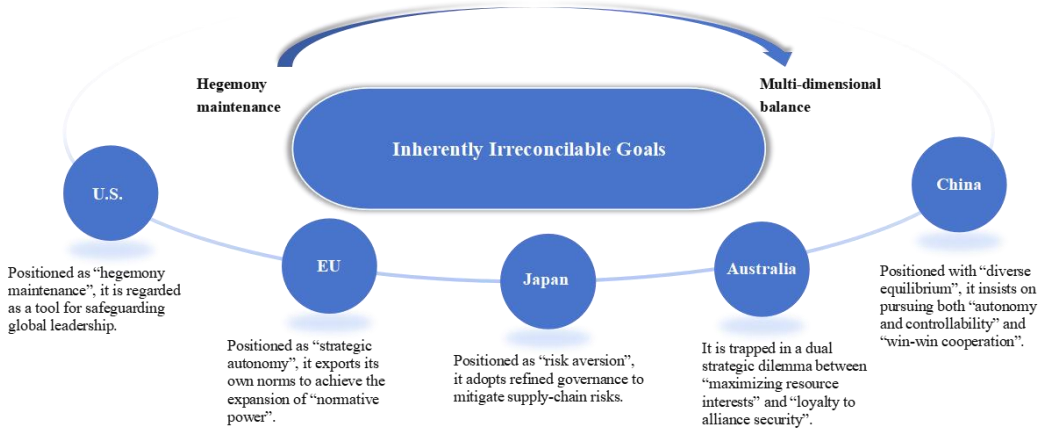

Figure 4 Core Divergences in the Critical Mineral Discourse Among Major Economies - Strategic Positioning

Major economies have formed irreconcilable strategic objectives due to differences in resource endowments, positions in industrial chains, and security considerations, resulting in a lack of a unified underlying logic for cooperation. The U.S. places critical minerals at the core of maintaining its technological superiority and geopolitical strategy, emphasizing "security first" and reshaping supply chain structures through alliance-based and exclusive institutional arrangements, with the fundamental goal of constraining the strategic space of potential competitors. The European Union emphasizes a "norm-led" approach, using values such as environmental protection, human rights, and sustainability as tools for spillover effects, transforming rule exports into market barriers with the intention of securing institutional high ground in industrial competition. Japan adopts a more pragmatic and defensive stance, aiming to mitigate external shocks through technological substitution, supply chain diversification, and joint reserve mechanisms, thereby avoiding entanglement in major power rivalries. Australia oscillates between economic and security tracks, with high export dependence on China yet needing to maintain strategic alignment with the U.S., leading to repeated policy adjustments between "resource interests" and "alliance obligations". China adheres to a dual approach of "self-reliance and controllability" alongside "win-win cooperation", strengthening domestic supply security while promoting mutually beneficial cooperation through the Belt and Road Initiative, and opposing the incorporation of resource issues into bloc-based competition.

(2) Conflicting narrative frameworks: sources of legitimacy contradict each other

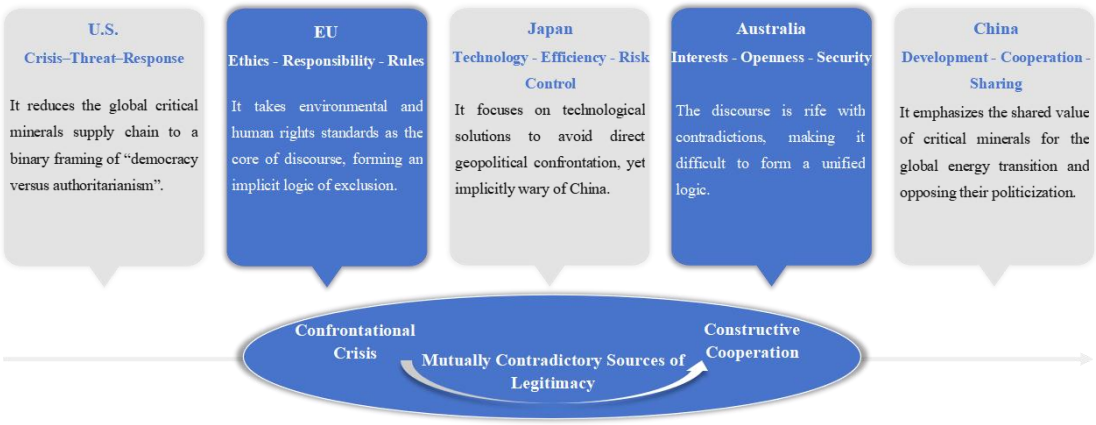

Figure 5 Core Divergences in the Critical Mineral Discourse Among Major Economies - Narrative Frameworks

The discourse frameworks constructed by various economies around critical minerals are intended to underpin the legitimacy of their own policies, yet their logical systems are mutually exclusive. The U.S., taking "threat - vulnerability - response" as its main narrative thread, frames supply chain risks as outcomes of geopolitical competition, thereby justifying alliance exclusivity, technological blockades, and incentives for domestic manufacturing. The European Union constructs a narrative centered on "ethics - responsibility - rules", enhancing its normative power by emphasizing "clean supply chains" and "high-standard trade". Japan relies on a path of "technology - efficiency - risk control", highlighting data and regulatory support to minimize value-based confrontations. Australia's discourse frequently shifts among "open investment", "national interests", and "security of critical assets", revealing obvious dual pressures and self-contradictions. China's discourse system is grounded in "development - cooperation - sharing", viewing critical minerals as a shared material foundation for the global energy transition and emphasizing multilateral governance and mutually beneficial cooperation. Because of different foundations of legitimacy, narratives struggle to find common ground, leaving economies often stuck in parallel expressions and mutual non-recognition during international dialogues.

(3) Gaps in sentiment and subjective cognition: affective mismatch intensifying misinterpretation

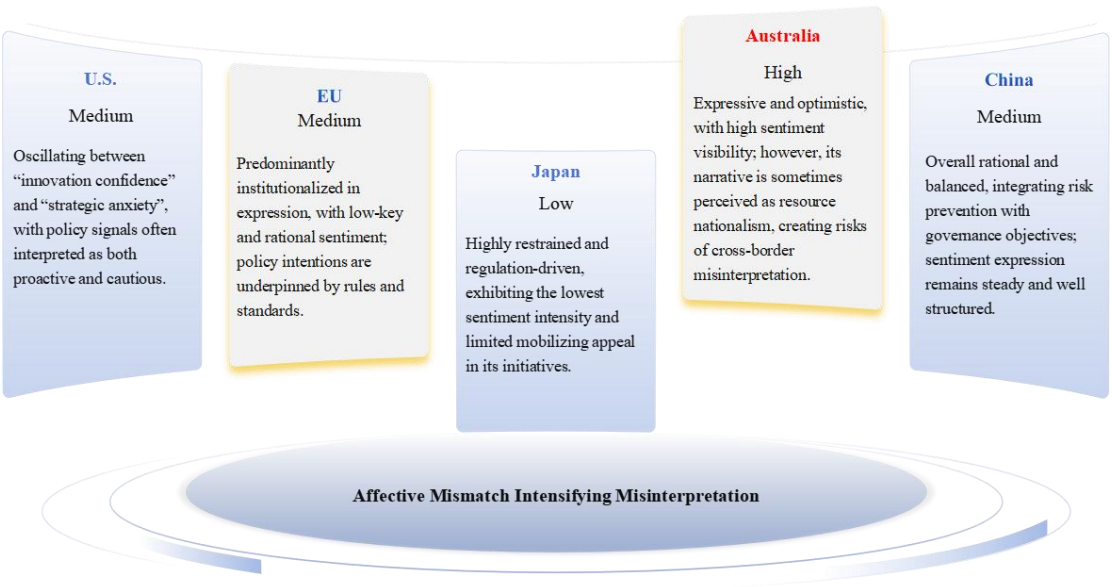

Figure 6 Core Divergences in the Critical Mineral Discourse Among Major Economies - Sentiment and Subjectivity

Different entities exhibit significant disparities in sentiment orientation and the intensity of subjectivity in the realm of critical minerals, creating implicit resistance to policy interactions. The U.S. oscillates between sentiment expressions of "innovation confidence" and "strategic anxiety". Australia, as a resource export-oriented economy, tends to adopt a more positive and optimistic tone, with phrases like "global best" and "growth opportunities" frequently appearing in its policies and media. This can easily be interpreted by outsiders as resource nationalism. Japan maintains a high degree of restraint, focusing primarily on data and regulations, with the lowest sentiment polarity. It places greater emphasis on risk management and technical solutions, but its insufficient sentiment expression renders its initiatives lacking in appeal. China and the European Union, on the whole, exhibit a more rational approach. China, while emphasizing risk prevention and control, also demonstrates structural pressures and governance demands, whereas the EU maintains an institutionalized, low sentiment expression. This results in a tripolar pattern of "high sentiment intensity (Australia) - medium sentiment intensity (U.S., China and EU) - low sentiment intensity (Japan)". Consequently, the same policy signals are prone to being overinterpreted or misinterpreted in cross-cultural communication, with cooperation initiatives often misread as strategic expansion or passive compromise, thereby deepening strategic distrust.

2.2.2 Policy implications

(1) Adopt a "pluralistic balance" approach to navigate dual pressures of hegemony and rules, consolidating a strategy that balances autonomy with openness

Facing the two dominant logics — the U.S.'s "security-led" approach and the EU's "rule spillover" approach — China needs to maintain strategic steadiness and flexibility through a

pluralistic balance. At the domestic level, China should continue to strengthen its resource security capabilities by accelerating domestic exploration and the construction of strategic reserves, increasing the self-supply ratio of critical minerals such as rare earths, lithium, nickel, and cobalt, and consolidating governance foundations for green development and recycling through institutional improvements. At the international level, China should further deepen mutually beneficial cooperation with resource-producing countries, promoting full-chain partnerships spanning resource development, refining and processing, and recycling, thereby forming a stable community of shared interests. At the same time, China should actively participate in institutional shaping on multilateral platforms, advocating values such as development rights and equitable accessibility, and guiding resource governance from a geopolitical competition narrative toward a sustainable development framework. Through the dual engines of autonomy and inclusiveness, China can maintain strategic initiative in the global critical minerals landscape.

(2) Strengthen the influence of the "development - cooperation - win-win" discourse to counter Western dual narratives of confrontation and ethics

China's current narratives are constructive, yet their international communication impact remains limited. To enhance discourse influence, efforts need to be focused on three key areas. First, define the critical minerals industry as a shared foundation for the global energy transition, emphasizing its non-zero-sum nature, so that the international community understands that China's crucial role in processing and manufacturing is aimed at driving global green transition, rather than seeking unilateral advantages. Second, demonstrate China's contributions to sustainable governance through specific cooperation cases, such as the application of green technologies, enhancement of local employment, and environmental improvements in overseas projects, thereby countering stigmatizing narratives with concrete facts. Third, China should proactively propose actionable multilateral governance initiatives, such as mechanisms for a resilient cooperation platform on critical minerals, shared databases, and joint reserves, ensuring that "cooperation" goes beyond mere principles. Through a structured discourse system, case-based expressions, and institutionalized proposals, China can construct a more credible, concrete, and tangible narrative image in international public opinion.

(3) Balance risk prevention with cooperative appeal, enhancing empathy and transparency in policy communication

China's policies on critical minerals are generally rational and steady, yet they exhibit issues such as insufficient sentiment expression and inadequate subjective declarations in international communication. In the future, while maintaining strategic clarity, China should moderately strengthen its sentiment expression and articulation of interests. China should proactively elucidate the challenges it faces in terms of resource pressures, environmental governance, and technological breakthroughs, enhancing external understanding with an open attitude. While emphasizing self-reliance and controllability, China should demonstrate its sincerity for

cooperation through practical measures such as opening up certain non-sensitive technologies and jointly constructing green demonstration projects. Additionally, China should encourage diverse entities, including enterprises, think tanks, and academic institutions, to participate in international communication, thereby establishing a richer narrative landscape from multiple perspectives. Tailoring communication approaches to the narrative preferences of different countries, China could, for instance, intensify "data-driven dialogues" with Japan, highlight "development dividends" for resource-rich countries, and emphasize "standard harmonization" with the European Union. By enhancing strategic transparency and sentiment resonance, China's discourse system can become more credible and appealing.

3 Future Outlook of Critical Mineral Discourse Competition Among Major Economies and Policy Recommendations for China's Strategies in Response

3.1 Future outlook for the global critical mineral discourse system

(1) The global rule system shows an accelerating trend toward fragmentation

The U.S., Europe, Japan, Australia, and China are each establishing mutually incompatible regional regulatory frameworks. The U.S. is leveraging the "Minerals Security Partnership (MSP)" to expand exclusive alliances, covering 75% of global lithium processing capacity, 80% of cobalt processing capacity, and 70% of rare earth processing capacity. The European Union has set mandatory targets through its *Critical Raw Materials Act*, aiming for 10% domestic mining, 40% processing, and 25% recycling by 2030, while establishing green compliance barriers via *the Batteries Regulation* and *the Corporate Sustainability Due Diligence Directive*. Japan will establish a regional regulatory framework centered around "stable supply - high-end manufacturing", with high-purity processing standards, a technology collaboration system, and a supply chain traceability mechanism at its core. It will use deep processing cooperation with Australia, Canada, and Southeast Asia as implementation vehicles. However, this framework exhibits exclusivity in terms of value chain access, sustainability standards, and selection of supply chain partners, making it difficult to align with China's inclusive cooperation rules. Australia will leverage the narrative of being a "trusted supplier" to strengthen responsible mining standards, carbon emission accounting rules, and a green mineral certification system. Through frameworks involving the U.S., Japan, and Australia, it will promote the regional proliferation of these standards, forming a rules-based system oriented toward securing resource export safety. This system exhibits a high degree of alignment with Japan in terms of cooperation orientation and access conditions, yet structurally incompatible with China's advocacy of open and equitable development-focused rules in both conceptual and implementation mechanisms. China is promoting the international adoption of standards for green mining and intelligent mining under the Belt and Road Initiative. The parallel existence of these three sets of rules has led to

difficulties in mutual recognition of international standards, weakened multilateral mechanisms, and significantly increased compliance costs for enterprises.

(2) The regionalization pattern of supply chains is taking shape at an accelerated pace

Driven by both geopolitical risks and industrial policies, the global supply chains for critical minerals is shifting from “global mobility” to “egional agglomeration”. The U.S. is focusing on establishing a North American supply hub and a near-shoring system, collaborating with Canada and Mexico to strategically deploy production capacities for lithium, rare earths, and other critical minerals. The European Union aims to enhance regional self-sufficiency through internal circulation and a green-directive framework, seeking to reduce its high dependence on external resources. Japan, adopting a prudent and steady strategy, is deepening investment and technological cooperation with resource-rich countries such as Australia and Indonesia. Meanwhile, China continues to leverage the Belt and Road Initiative to strengthen its resource cooperation networks in Africa, Latin America, and Southeast Asia.

The increase in self-sufficiency driven by regionalization helps mitigate structural risks in some economies, but it also signifies a more pronounced trend of fragmentation in the global supply system. The independent construction of regional chains will weaken the regulatory capacity of the global market, potentially rendering supply chains more vulnerable under extreme events.

(3) The multipolar co-governance pattern is beginning to take shape

As the bargaining power of resource-producing countries increases, global critical minerals governance is shifting from a “consumer-country-dominated” model toward a multi-actor co-governance framework involving resource-producing countries, consumer countries, and international organizations. Latin American countries are attempting to establish a “Lithium OPEC” to maximize resource revenue, while African nations generally demand an increase in local processing ratios and technology transfer. The international community is increasingly reaching consensus on “green, circular, and equitable” principles, leading to a rise in the proportion of recycled minerals, the continuous improvement of carbon-footprint accounting systems, and the rapid development of global sustainable funds.

Against this backdrop, the concept of “extensive consultation, joint contribution, and shared benefits” advocated by China has gradually garnered support from more Southern countries. South-South cooperation and the united voice of the Global South will play an increasingly significant role in resource governance, providing institutional support for global multipolar governance.

3.2 Structural Challenges for China in Enhancing Critical Mineral Discourse Power

(1) The geopolitical containment is intensifying

The U.S.-led Minerals Security Partnership (MSP) excludes China from the supply chain restructuring framework, while its member states control a large share of global critical minerals processing capacity and pursue intensive diplomatic engagement with resource-producing countries. Although the European Union does not explicitly target China, its dual tools of "access thresholds + compliance systems" impose substantive restrictions on Chinese enterprises. Meanwhile, mechanisms such as the "Global Gateway" and the "Indo-Pacific Economic Framework" are accelerating their expansion into resource-rich regions like Africa and South America, putting pressure on China's existing cooperative foundations.

(2) China's influence in rule-making and standard-setting domains remains insufficient

Currently, international rules governing critical minerals are predominantly led by the U.S. and Europe. China has limited representation in international standard-setting organizations such as ISO, making it difficult to take the lead in agenda-setting. Driven by policies such as the Carbon Border Adjustment Mechanism (CBAM) and *the Inflation Reduction Act* (IRA), China is facing a significant increase in green barriers. Due to systemic differences and institutional constraints, Chinese enterprises exhibit insufficient compliance capabilities in areas such as Organisation for Economic Co-operation and Development (OECD) due diligence and the EU Corporate Sustainability Due Diligence Directive (CSDDD), with only around 30% of enterprises meeting the requirements. This not only restricts their space for outward investment but also weakens the institutional foundation for their participation in rule-making.

(3) Structural weaknesses persist in the industrial supply chain

Upstream resource security is fragile: China's external dependency rates for cobalt, platinum group metals, and niobium exceed 90%, 85%, and 100%, respectively. Overseas equity mine production accounts for less than 20% of domestic consumption, significantly lower than Japan's ratio. Although China's midstream smelting sector holds a scale advantage (with global market shares exceeding 50% for rare earths and lithium salts), it faces environmental pressures and is stigmatized as "high energy-consuming and highly polluting". Downstream high-end materials (such as aerospace high-temperature alloys and high-performance permanent magnets) and intelligent exploration equipment still rely on imports, with insufficient stability in the industrial chain and independent innovation capabilities, constraining the leap in the value chain.

(4) Significant gaps remain in international communication and external perception

For a long time, Western media have interpreted China's overseas mining investments through an ideological lens, creating negative labels such as "resource plundering" and "environmental destruction", making it difficult for China's narrative to be effectively accepted by mainstream public opinion. China lacks sufficient "storytelling capabilities" in the realm of global resource governance. At the corporate level, there are weaknesses in fulfilling social responsibilities, engaging in community communication, and responding to public opinion.

Insufficient cross-cultural communication skills and a shortage of versatile international talent have hindered the shaping of the country's overall image and the enhancement of its discourse power.

3.3 Policy Recommendations for China

(1) Overcome geopolitical containment by building a non-confrontational, diversified cooperation network

Against the backdrop of intensifying global competition for critical minerals and rising geopolitical uncertainties, the model of single-country dominance or exclusive alliances finds it difficult to effectively address supply chain volatility and the spillover of risks. Specifically, it is essential to establish transnational processing cooperation bases with the participation of multiple countries, fostering a binding of interests between resource-exporting countries and consumer countries. Additionally, a linkage development mechanism between resource-exporting and consumer countries should be set up to enhance coordination from upstream exploration to midstream and downstream processing. Meanwhile, special mechanisms and long-term issue platforms for critical mineral governance should be established to enhance the institutional stability and sustainability of cooperation. These measures will help reduce confrontational tones and strengthen China's cooperative cohesion and structural influence within the global critical mineral system.

(2) Break through rule-based barriers by promoting the internationalization of "China Standards" and enhancing compliance capabilities

As the governance of critical minerals increasingly delves into the realms of rules, standards, and institutional frameworks, China still faces the issue of insufficient embeddedness in terms of its participation and voice in the formulation of international standards. To this end, it is advisable to proactively incorporate negotiation topics on cross-group critical mineral rules into multilateral forums to enhance participation in rule-shaping; to promote the joint formulation of industry conventions on mineral development, processing, and trade by resource countries and consumer countries; and to strengthen the material and organizational foundations for institutionalized cooperation by establishing a joint governance fund involving countries, enterprises, and international organizations. The approaches will help enhance the international visibility and acceptance of Chinese standards, and strengthen China's institutional voice in global mineral governance.

(3) Address industrial supply chain gaps through a comprehensive "full-chain resilience enhancement initiative"

Currently, the supply chain of critical minerals still harbors structural vulnerabilities in multiple links such as exploration, processing, and recycling, with external shocks prone to

triggering systemic risks. In response to this challenge, it is essential to systematically establish a risk early warning and data-sharing mechanism across the entire supply chain, enhancing the capacity for forward-looking identification of supply disruptions and price fluctuations. Support should be provided to resource countries in building midstream processing facilities and systems for mutual recognition of technologies locally, thereby improving the overall stability of the supply chain. Meanwhile, efforts should be made to promote industrial parks for critical mineral recycling and implement incentive policies for circular utilization, strengthening the capacity for secondary resource supply. Enhancing the resilience across the entire supply chain can significantly bolster the shock resistance and long-term security of China's critical mineral system.

(4) Reverse external perception challenges by developing an international communication system that is credible, tangible, and accessible

In the international arena of public opinions, the issue of critical minerals is prone to being dominated by security-oriented and politicized narratives, posing a practical challenge for China in terms of a passive image and narrative imbalance. To this end, it is advisable to introduce a third-party joint evaluation mechanism to enhance the objectivity and credibility of international communication content; to collaborate with multiple countries to issue special reports on critical minerals, forming a narrative structure endorsed by multiple entities; and establish a multilingual audience feedback and public-opinion monitoring mechanism to achieve dynamic adjustments in communication effectiveness. Through systematic communication efforts, China can effectively improve its international perception environment in the field of critical minerals and shape a national image that is responsible and open to cooperation.