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Critical Minerals in EU Trade Discourse: Navigating a Trilemma in Times of Geopolitical Competition

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Summary

Critical minerals (CMs) have become a strategic priority for the European Union (EU) amid the green and digital transitions. These resources – including lithium, cobalt, rare earths and nickel – are essential for clean energy technologies, defence systems and electronics. Yet, their processing and refining are highly concentrated in a few countries, leaving the EU especially vulnerable to supply disruptions and fuelling geopolitical tensions.

Recent shocks, including the COVID-19 pandemic and the war in Ukraine, have further exposed the fragility of supply chains. At the same time, extracting and trading CMs pose severe environmental and social challenges, from high carbon footprints to local community impacts. EU trade policy is therefore confronted with a trilemma: how to safeguard economic competitiveness, ensure environmental sustainability and enhance security of supply.

This policy brief summarises research tracing how the European Commission's trade discourse on CMs has evolved to address the trilemma (Laurens, 2025). Initially, communications focused narrowly on free trade and market access for raw materials. Gradually, sustainability and security considerations entered the narrative. Most recently, the EU has embraced a hybrid framing, simultaneously highlighting economic, environmental and security objectives in its trade discourse on CMs.

Although this hybrid discursive approach can help build broader support for CM policies and agreements by appealing to diverse stakeholders, it also demands careful policy design to minimise trade-offs and deliver on its promises. Without credible implementation and genuine integration of economic, environmental and security objectives, hybrid framing risks remaining largely rhetorical and failing to steer policy in practice.

Key policy messages:

- The EU should adopt an integrated approach that effectively addresses economic, sustainability and security goals together while anticipating trade-offs to support more robust CM policies. This requires strong coordination across trade, industry, environment and security-related directorates-general to align CM strategies, avoid policy conflicts and maximise synergies. It may also require short-term economic sacrifices for long-term resilience.
- Early and meaningful engagement with research institutions, civil society, local communities and industry should move beyond formal consultation and enable genuine co-creation of solutions. Dialogue should begin before key decisions on CMs are finalised, incorporate stakeholder input transparently, and respond to concerns about sustainability and security of supply.
- CM policies and agreements should provide for binding obligations and concrete implementation plans to ensure environmental and labour protection, local value addition, skills development and technology transfer in resource-rich but economically vulnerable regions. Listening to partner governments and local communities as well as investing in the knowledge of local political, social and environmental contexts are essential for building trust and long-term partnerships.
- International cooperation on CMs should be strengthened through inclusive arrangements that involve both major consumers and producing countries. Clubs composed primarily of resource-poor but wealthy economies risk being perceived as exclusionary.

Introduction

Critical minerals (CMs) have rapidly moved to the forefront of European Union (EU) trade and industrial policy. These minerals – including rare earth elements, cobalt, lithium and nickel – are essential for producing electric vehicle batteries, wind turbines, solar panels, semiconductors and military equipment. Demand for CMs is projected to surge in the coming decades as the EU and the world deploy clean energy and high-tech solutions (International Energy Agency, 2025). However, the production and refining of most CMs are concentrated in a handful of countries. China, for example, dominates global refining of lithium, graphite and rare earths, while the Democratic Republic of the Congo (DRC) produces most of the cobalt. The resulting heavy import dependence means that any supply shock, whether due to geopolitical tensions, export restrictions or other disruptions, could threaten the EU's economic stability and the pace of its green transition.

Within the EU, awareness of the risks associated with CMs has grown rapidly in recent years. By the late 2010s, it became clear that securing reliable access to CMs was not just a trade issue but also a question of national and economic security. The COVID-19 pandemic, which caused global supply bottlenecks, and Russia's 2022 invasion of Ukraine, which exposed the EU's energy dependence, served as wake-up calls (Herranz-Surrallés, Damro, & Eckert, 2024). These crises revealed how strategic supply chains could be disrupted or even weaponised, heightening geopolitical tensions and prompting the EU to strengthen its "strategic autonomy" (Jacobs, Gheyle, De Ville, & Orbie, 2023). At the same time, the EU's climate ambitions, embodied in the 2019 European Green Deal, emphasised that increased mining and mineral sourcing must go hand in hand with sustainable practices.

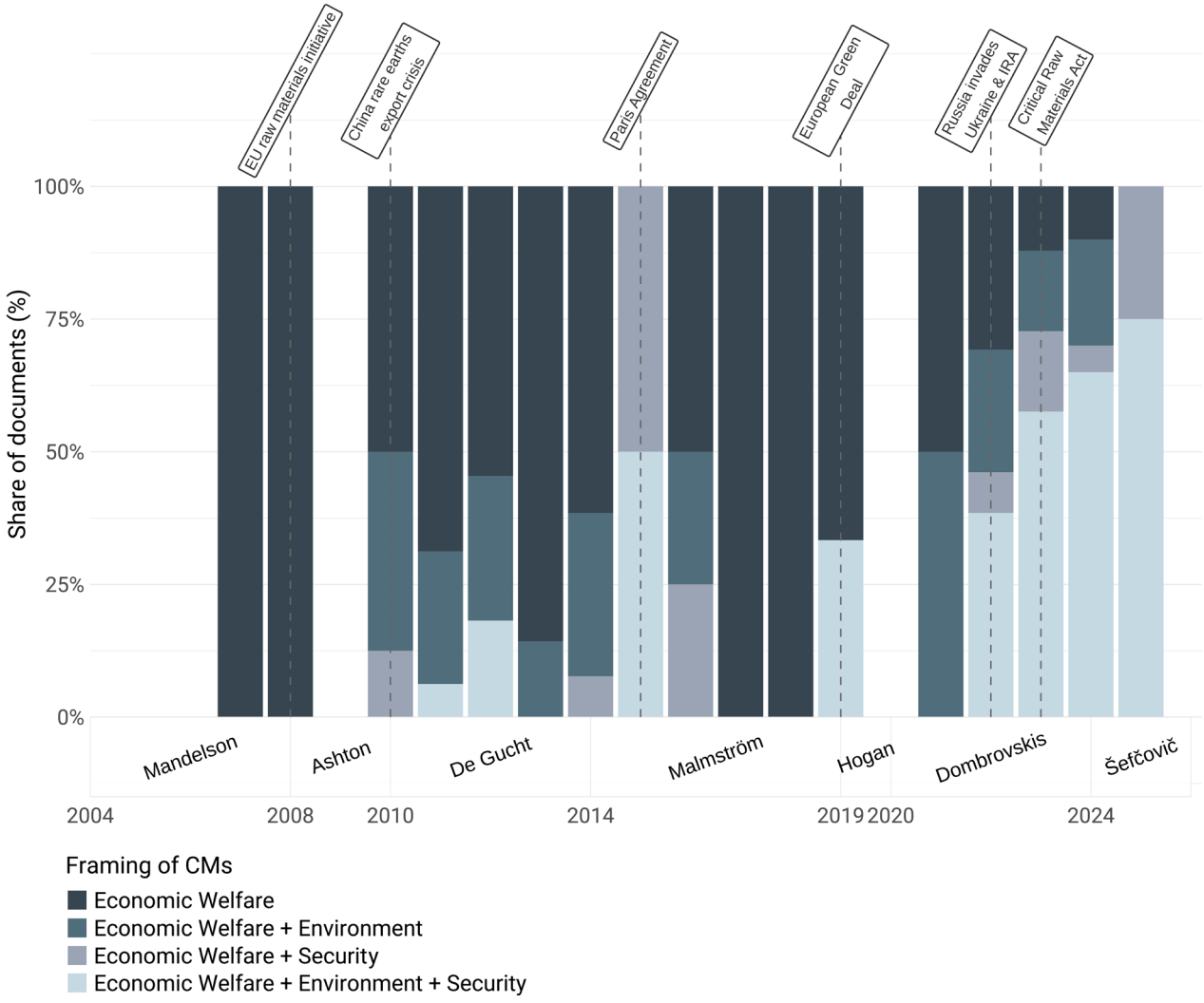
These developments have highlighted that CMs lie at the intersection of three overarching policy objectives: economic competitiveness, environmental sustainability and security (Laurens, 2025). Ensuring a secure supply of CMs while upholding environmental and economic goals is a complex equation referred to as the "CM governance trilemma" (Laurens, 2025). The three objectives are often in tension: (1) economic welfare depends on keeping industries competitive and materials affordable; (2) environmental protection requires not only sustainable mining but also the use of CMs to support the clean energy transition; and (3) security focuses on reducing strategic dependencies and shielding supply chains from geopolitical risks. Pursuing all three simultaneously entails difficult trade-offs. For instance, prioritising security of supply might lead the EU to favour geopolitically reliable partners. However, such partners do not necessarily uphold the highest environmental standards. Conversely, imposing stringent environmental standards on CM imports could exclude numerous suppliers and increase the EU's vulnerability to supply shocks. Similarly, efforts to keep raw material prices low for industry may conflict with investments needed to improve environmental performance along the supply chain. Reconciling these objectives has become a defining challenge for EU policy-makers. This policy brief examines how the EU's trade discourse on CMs has evolved to address this challenge, and what it means for future CM policies.

Evolution of EU trade discourse on critical minerals

This policy brief presents findings from a recent study by Laurens (2025), which relies on a dataset of 1,868 press releases, speeches and policy communications issued by the European Commission's Directorate-General for Trade and Economic Security (DG Trade) between 1989 and 10 February 2025 (Bertram, 2025). The study shows that EU trade discourse on CMs has undergone a three-phase process of "framing hybridisation", in which economic, environmental and security frames have become increasingly intertwined. Understanding such framing matters because it may shape problem definitions, legitimise proposed policy responses and influence public opinion.

Phase 1 – Economic dominance (late 2000s): For much of the 2000s, CMs were a marginal topic in EU trade discussions (see Figure 1). In this period, the prevailing frame was economic, emphasising open markets and free trade as the way to secure resources. A telling example came in 2008, when Trade Commissioner Peter Mandelson introduced the EU's Raw Materials Initiative, calling for strict rules on free raw material trade in EU agreements and support for eliminating export restrictions as a "basic principle of a global economy" (European Commission, 2008). The objective was clear: remove distortions and secure a level playing field for European companies, treating CMs as part of the broader EU agenda of trade liberalisation.

Figure 1: Framing of CMs in EU trade discourse (2004-2025)



Notes: The figure displays the proportion of DG Trade discourse documents related to CMs, categorised by economic, environmental and security frames. For visual clarity, the timeline begins in 2004 (occurrences first register in 2007) and ends in February 2025. The figure depicts three distinct phases: a pre-2010 period dominated by the economic frame (in dark blue); a 2010s phase characterised by the emergence of the environmental and security frames, always in combination with the dominant economic frame; and a post-2020 phase in which all three frames appear frequently and often co-occur, suggesting the rise of hybrid framing (in light blue). IRA = Inflation Reduction Act.

Source: Laurens (2025)

Phase 2 – Framing destabilisation (2010s): The 2010s witnessed a series of events that disrupted the one-dimensional, market-centric framing of CMs. A key turning point was the rare earths crisis of 2010, when China – the world's dominant rare earth producer – imposed an export embargo amid a diplomatic dispute (Kalantzakos, 2020). The Commission initially responded by reasserting trade rules, joining other countries in successfully challenging China's measures at the World Trade Organization. Trade Commissioner Karel De Gucht hailed the ruling as "a clear verdict for open trade and fair access" (European Commission, 2011). Yet, this period also marked the emergence of new frames alongside the economic frame.

On the security side, EU statements began, albeit sporadically, to acknowledge the risk of dependence on a "handful of countries" for critical inputs (European Commission, 2010). At this stage, however, security concerns were expressed more clearly in higher-level strategic documents, such as the 2015 *Trade for All* and the *Europe 2020* strategies, while remaining less visible in discourse.

In parallel, the environmental frame also began to emerge. At the beginning of the 2010s, this frame was typically appended to the dominant economic narrative rather than fully integrated into it. For instance, the Commission acknowledged environmental concerns around mining, but mainly to argue that export restrictions were not an effective tool for achieving sustainability.

Phase 3 – Hybrid framing (2020s): Since 2020, the EU's narrative on CMs often combines economic, environmental and security objectives in a hybrid framing. The volume of EU communications about CMs also rose sharply. Between 2007 and 2019, only 5 out of 70 DG Trade communications (7.1 per cent) combined the economic, environmental and security frames, whereas from 2020 onwards, 43 out of 78 documents (55.1 per cent) did so. In short, over two decades, the framing of CMs in the EU's trade discourse expanded from a narrow free-trade issue to a complex, multi-faceted policy narrative.

Policy developments reflect this framing hybridisation. The landmark EU Critical Raw Materials Act (CRMA), in force since May 2024, sets 2030 targets for at least 10 per cent of strategic raw materials to come from domestic extraction, 40 per cent from EU processing and 25 per cent from recycling. It also aims to limit reliance on any single non-EU supplier to no more than 65 per cent per material, and notes that rising demand must be managed to avoid environmental and social harm. In addition, recent EU free trade agreements with Chile and Mercosur are promoted with the three frames. Since 2021, the EU has also concluded strategic partnerships on sustainable raw materials with 14 countries spanning six continents. These non-binding instruments are intended, at least on paper, to support local value addition in partner countries, strengthen European security of supply, and promote high environmental, social and governance (ESG) standards in mining. For instance, the Memorandum of Understanding between the EU and Namibia aims to:

> advance the *value, security, and sustainability of trade and investment into resilient raw materials* and downstream value chains across both Namibia and the European Union; to support the development of renewable energy sources taking into account its contribution to energy security, as well as the *impact on the environment and water resources in Namibia and the decarbonisation of the energy sector* with a particular focus on renewable hydrogen's potential; to create a well-functioning renewable hydrogen market and *promote new channels for investment and trade opportunities*, and in cooperation between Namibia and the EU. (European Commission, 2022, emphasis added)

However, these partnerships also face criticism and require careful implementation. For instance, Global Witness (2024) has raised ethical concerns about EU partnerships with Australia, Argentina, Uzbekistan and the DRC, pointing to issues ranging from Indigenous rights violations and environmental damage to labour repression and corruption.

Drivers of hybridisation: shocks, agency and stakeholders

Several potential factors may have contributed to the hybridisation of EU trade discourse on CMs. First, **trigger events** prompted a rethink of CM discourse (and policy). China's 2010 rare earths embargo first drew attention to supply risks, and the COVID-19 pandemic and Russia's invasion of Ukraine had an even greater impact in bringing security of supply to the centre of EU discourse. Moreover, the Paris Agreement (2015), and later the European Green Deal (2019), raised the EU's climate ambitions and highlighted the need for CMs to enable the green transition. Developments abroad may also have influenced the discourse. For instance, the United States' 2022 Inflation Reduction Act tied electric vehicle tax credits to the use of minerals sourced from allied countries. The EU responded with its own measures, including the CRMA and temporary adjustments to state-aid rules, allowing member states to provide greater financial support to their domestic industries to protect European competitiveness. More broadly, the evolution of the EU's trade discourse on CMs reflects the wider shift signalled in the Commission's 2021 *Trade Policy Review*, which calls for an "open, sustainable, and assertive" approach to trade policy.

Second, **leadership and institutional agendas** also contributed to the evolution of the discourse. The Barroso Commission (2004-2014) framed trade as a driver of growth, the Juncker Commission (2014-2019) reframed it as values-based in response to public contestation and the current von der Leyen Commission (2019-), which explicitly set out to be a "geopolitical Commission" (Koenig, 2019), has linked trade more explicitly to security, climate goals and digital sovereignty, reflecting a crisis-responsive posture (Baracani, 2023).

Third, **stakeholder pressure** from industry and civil society likely influenced the shift towards hybrid framing. Civil society organisations and the broader public have long demanded that trade policy reflect values beyond economic growth, as evidenced by the vigorous campaigns against the Transatlantic Trade and Investment Partnership (TTIP) and the Comprehensive Economic and Trade Agreement (CETA), which revolved around environmental protection, food safety and sovereignty (De Bièvre, 2018). This increased public scrutiny forced the European Commission to adjust its rhetoric. In the context of CMs, civil society and academics have similarly raised alarms about the ecological and human rights implications of mining, including deforestation, pollution and labour rights abuses in mining communities (Dou, Xu, Zhu, & Keenan, 2023).

On the other side, industry stakeholders and several EU member states have urged the Commission to take the risks concerning the security of supply seriously. European manufacturers, particularly in the automotive sector, have cautioned that disruptions in mineral supply could trigger production bottlenecks (Reuters, 2025). Meanwhile, some member state governments, notably France, have promoted the idea of strategic autonomy (Politico, 2025).

Conclusion and policy recommendations

CM governance is a complex, cross-cutting challenge that no country can tackle alone. Securing reliable supplies while maintaining high sustainability standards and safeguarding economic competitiveness calls for stronger international cooperation and innovative policy solutions. By acknowledging economic, environmental and security objectives together, the EU has effectively committed to advancing all three. This balancing act must now be matched with credible policy design and implementation so that the hybrid framing does not remain purely rhetorical. Rather than letting competition for CMs fuel new tensions, countries should work together to build resilient, sustainable supply chains that deliver mutual benefits. The recommendations below – building on the Laurens (2025) study and additional research on national and international CM policies – outline practical steps EU policy-makers (and others) can take to move in this direction:

1. Establish inter-directorate or inter-ministerial coordination across trade, industry, environment and security portfolios so that policies focused on CMs are aligned and mutually reinforcing. In recent years, several advanced economies concerned about CM shortages and geopolitical competition have placed greater emphasis on the economic–security side of the trilemma. Although this may be understandable in the short term, failing to meaningfully integrate the sustainability dimension into all CM policies could have serious environmental consequences in the medium term, ultimately undermining crucial decarbonisation efforts. It could also compromise policy coherence by creating contradictions across policy domains, ultimately reducing the effectiveness of CM governance.
2. Include binding and enforceable ESG standards in all CM-related agreements and national policies. These should cover CO_2 emissions, deforestation, water and land use, labour conditions, and the rights of Indigenous peoples and/or local communities in refining and producing countries. Such standards are essential to prevent a race to the bottom and should be complemented by strong due diligence and circularity obligations for consumer countries. Although binding ESG standards may exacerbate the trilemma by shrinking the pool of suppliers, they may also reduce supply-chain, reputational and regulatory risks in the long run. In addition, although agreements and policies focused mainly on resource access may be quicker to conclude, they are likely to face domestic political resistance if they fail to concretely address environmental and social harm in resource-rich developing countries.
3. Involve civil society organisations, communities affected by mining projects, academics and industry in CM policy-making. Engagement must begin early and be integrated into decision-making. All contributions should be documented and made publicly available to ensure transparency.
4. Position resource-rich developing countries as equal partners by including technology transfer, local processing and fair revenue-sharing in agreements, and by using development finance to support sustainable mining projects that benefit local communities. Ensure these countries are involved in discussions on potential clubs and alliances, and explore inclusive frameworks, such as the proposed Global Minerals Trust (Ali et al., 2025), so that global cooperation reflects their interests as well as those of major consumers. Listening to partners does not necessarily imply diluting binding ESG standards. Although compliance with such standards can be burdensome – especially for partners with limited regulatory or technical capacity – meaningful dialogue will allow the EU (and others) to tailor support, provide capacity-building and design transition periods that preserve the strength of ESG commitments while ensuring they are feasible.
5. Use international trade forums such as the World Trade Organization to clarify rules on acceptable measures for CMs (e.g. export controls or subsidies), accommodating legitimate sustainability and security concerns while discouraging protectionism.
6. Invest in improved data, enhanced data-sharing and foresight exercises. Better knowledge is crucial for governments to navigate uncertainty and make well-informed decisions on CMs.
7. Prioritise research and development in alternative materials, advanced recycling technologies and infrastructure, and more efficient product designs to reduce dependence on scarce minerals and lower overall demand.

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