

# EU and Italian De-risking Strategies for Energy Transition Critical Raw Materials

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#### ABSTRACT

Governments and stakeholders at large have become aware of the material dimension of the green transition. Without stable and secure supplies of critical raw materials (CRMs), the industrial transformation – underpinned by the energy and digital transition – will not happen. However, the current market structure entails strategic vulnerabilities – especially the high geographical concentration with a dominant role played by China. The EU has increasingly adapted its regulatory framework with the Critical Raw Materials Act to reduce such vulnerabilities through the development of a European value chain (extraction, processing and recycling) as well as strategic partnerships with key partners. However, a successful de-risking strategy will take time and require massive amounts of money.

Critical raw materials | Supply chains | European Union | Italy



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## Introduction

Policymakers and stakeholders at large have increasingly become aware of the material dimension of the green and digital transitions. Particularly, governments and companies have been dealing with the strategic importance of critical raw materials and minerals (CRMs), which are vital for a variety of technologies and sectors – including the clean-tech.

The combination of their economic importance and the absence of credible alternatives (especially in the short- and medium-term) dictates the urgency to ensure adequate, secure and stable supplies of these materials for many countries and companies. Steering away from fossil fuels will reduce import dependency but will not result in the complete demise of security risks. The shift towards more mineral-intensive technologies creates a new web of resource dependence with a distinct set of geopolitical and economic implications.

As decarbonisation unfolds, global energy systems will become more mineralintensive as clean technologies like solar photovoltaic, wind farms, batteries and electric vehicles (EVs) require generally more minerals than their fossil fuelbased counterparts. Global demand for such CRMs as lithium, copper and cobalt will quadruple on average by 2040 based on International Energy Agency (IEA) estimates.<sup>1</sup> Demand growth will vary among minerals and technologies. For example, global demand of lithium and graphite compared to 2020 is expected to

<sup>&</sup>lt;sup>1</sup> International Energy Agency (IEA), *The Role of Critical Minerals in Clean Transition*, May 2021, p. 8, https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions.

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grow up to ninety times, while neodymium and dysprosium demand is expected to grow by ten-eleven times by 2050 in a net-zero scenario.<sup>2</sup>

Moreover, the share of clean energy technologies in total demand for most minerals will continue its upward trend started in mid-2010s. EVs and battery storage account for 30 per cent of the total current demand for lithium, which has made them the largest consumers for that mineral ahead of consumer electronics since 2015.<sup>3</sup> The relevance of EVs and battery storage in the demand growth will continue. For example, their share of total demand is expected to reach over 40 per cent for copper and rare earths elements (REEs), 60-70 per cent for nickel and cobalt and almost 90 per cent for lithium by 2040 in the IEA's Sustainable Development Scenario.

Managing market fundamentals (supply-demand equilibrium) is essential to prevent potential supply disruptions and price spikes that would ultimately slow down the pace of the transition. However, the current market structure presents several barriers and risks for importing countries, starting from the high geographical concentration throughout the value chain with the dominant role of China for most of these CRMs.

The status quo is the result of geological endowment, industrial policies and the politico-economic paradigm on international trade and cooperation, dominant from the late 1980s through the early 2010s, which used to prioritise economic efficiency. However, multiple crises (e.g., Covid-19 and Russia's war on Ukraine) coupled with other growing geopolitical tensions have forced countries to analyse and reconsider their reliance on partners and countries aimed at mitigating national and economic security risks. For example, CRMs is the Achilles' heel to Europe's climate ambition as the bloc relies heavily on imports (70-100 per cent of its consumption).<sup>4</sup> In this transformation of priorities (economic security rather than efficiency) and US-China rivalry, competition on minerals and related supply chains has strongly emerged.<sup>5</sup> A 'de-risking' strategy is thus required not only to reduce potential risks but also to navigate growing fragmentation and polarisation.

According to the IEA, the combined market value of key minerals for the energy transition (copper, lithium, nickel, cobalt, graphite and REEs) is expected to more than double from today's 325 billion to 770 billion US dollars by 2040 in the net-

<sup>&</sup>lt;sup>2</sup> Samuel Carrara et al., Supply Chain Analysis and Material Demand Forecast in Strategic Technologies and Sectors in the EU. A Foresight Study, Luxembourg, Publications Office of the EU, 2023, p. 8, https://doi.org/10.2760/386650.

<sup>&</sup>lt;sup>3</sup> IEA, The Role of Critical Minerals in Clean Transition, cit., p. 5.

<sup>&</sup>lt;sup>4</sup> Rüya Perincek and Andreas Goldthau, "Ensuring Europe's Supply of Critical Minerals", in *Project Syndicate*, 22 January 2025, https://prosyn.org/FYae7f3.

<sup>&</sup>lt;sup>5</sup> Harry Dempsey, Camilla Hodgson and Jamie Smyth, "How Critical Minerals Became a Flash Point in US-China Trade War", in *Financial Times*, 24 April 2025, https://www.ft.com/content/aa03e3b0-606d-4106-97dc-bac8ad679131.

zero scenario.<sup>6</sup> Inevitably, companies and countries are keen to seize economic opportunities, build industries, create jobs and enhance resilience. Massive amounts of investments are required, however. The IEA estimates that 360-450 billion US dollars are needed in mining and 90-210 billion in refining and processing between 2022 and 2030 in a net-zero scenario.<sup>7</sup>

The assessment of criticality and vulnerability differ among importer countries due to different economic structures and supply diversification. For example, the EU identified 34 minerals as critical while the Trump Administration used a wider list of about fifty, including zinc and lithium. Therefore, countries need to carefully design cooperative initiatives where possible. At the same time, mineralrich countries have been eager to exploit their comparative advantages amidst the global competition also by imposing export restrictions to raw minerals as in the case of Indonesia' nickel industry.<sup>8</sup> This allows the country to develop refining and processing industries, export value-added products and collect higher returns.

Starting by mapping security risks related to CRMs, this paper looks at how the EU seeks to close potential unbalances between supply and demand by assessing different de-risking strategies, proposed in the recent Critical Raw Materials Act, with a particular focus on international cooperation with key partners. This paper also looks at how Italy is positioned in the new evolving resource competition in the context of European legislation.

## 1. CRMs security considerations

For importing countries, decarbonisation is increasingly embraced as an economic and energy security strategy, although they need to consider different security risks throughout the transition – including those related to CRMs. The main concern is the scarcity of resources, even though there are differences between CRMs and fossil fuels. Concerns about the latter are about absolute scarcity, while the scarcity issue of CRMs consists more of a problem of economic and geopolitical scarcity. Said otherwise, it is the affordable and reliable access to them rather than their exhaustion in the long term that worries policymakers.

This issue is strongly visible in the case of rare earth elements, minerals that are increasingly relevant to such critical industries as green technologies, defence and high tech. REEs deposits occur in many parts of the world; what defines these elements as "rare" is their low concentration: they do not occur in pure forms in

<sup>&</sup>lt;sup>6</sup> IEA, *Global Critical Minerals Outlook 2024*, May 2024, p. 7, https://www.iea.org/reports/globalcritical-minerals-outlook-2024.

<sup>&</sup>lt;sup>7</sup> IEA, Energy Technology Perspectives 2023, January 2023, https://www.iea.org/reports/energy-technology-perspectives-2023.

<sup>&</sup>lt;sup>8</sup> WTO, Dispute Settlement DS592: Indonesia – Measures Relating to Raw Materials, https://www. wto.org/english/tratop\_e/dispu\_e/cases\_e/ds592\_e.htm.

nature but are always compounded with other elements, thus they come with a low economic incentive to exploit them. Second, fossil fuel energy security depends on a continuous supply, meaning any disruption immediately affects the functioning of the current energy system. In contrast, CRMs and clean technologies are typically manufactured and can be stockpiled, so disruptions primarily influence the speed and scale of future deployments rather than causing immediate operational impacts on the low-carbon energy system.

Delving into more specific security vulnerabilities of CRMs, the current market structure presents several sources of insecurity from the supply side – especially for newcomers, namely geographical concentration, timing, price volatility as well as political, social and environmental concerns.

Starting from a geological point of view, the main cause of concern is primarily the *high geographical concentration* of current production as it's controlled by a small handful of countries. The top three producers of lithium, cobalt and REEs hold well over three-quarters of global output (figure 1).



#### Figure 1 | Largest producers of cobalt, lithium and REEs in 2023

Source: Author's elaboration on IEA, Global Critical Minerals Outlook 2024, cit.

Single countries can also account for over half of worldwide production, such as South Africa in the case of platinum and Democratic Republic of the Congo (DRC) with cobalt in 2019. Such concentration is likely to remain unchanged until 2040 based on the current pipeline of projects (figure 2). At the same time, data show that diversification strategies are increasingly generating results with new deposit found across the globe, with the consequent rise of new players and a reduction of China's share in certain minerals.<sup>9</sup>

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<sup>&</sup>lt;sup>9</sup> Jared Cohen, Wilson Shirley and Klara Svensson, "Resource Realism: The Geopolitics of Critical Mineral Supply Chains", in *Goldman Sachs Insights*, 13 September 2023, https://www.goldmansachs.com/insights/articles/resource-realism-the-geopolitics-of-critical-mineral-supply-chains.







#### Figure 3 | Geographical concentration of refining

Geology and natural endowment are only one part of the equation as geographical concentration is even more pronounced along the entire value chain, highlighting the implications of industrial policy. China has become the cornerstone of refining and processing for many of these minerals even when it plays a limited role in the upstream. China's share of refining is around 35 per cent for nickel, 50-70 per cent for lithium and cobalt, and 90 per cent for REEs (figure 3).

China has managed to gain such geostrategic advantage thanks to decades of consistent policy planning and support, economies of scales, relaxed environmental regulations and the role of stated-owned enterprises both at home and internationally. China's dominant role across the board underlines the need for importing countries to focus their diversification efforts not only in the upstream but throughout the entire value chain. With lack of adequate refining and processing capacity at home or in like-minded countries, importers will still need to export their raw materials to China.

Moreover, it is noteworthy also to view the geographical concentration issue through the lens of asset ownership, which is slightly different. For example, European and US companies generally play a major role for copper and lithium supplies, while Chinese companies have a greater role for nickel and cobalt production in key producing countries, like Indonesia for nickel and DRC for cobalt. Indeed, Chinese companies own or have a financial stake in fifteen of the DRC's nineteen cobalt-producing mines, accounting for half of the DRC's cobalt production in 2020.<sup>10</sup> This is the result of a twenty-year-period of growing investment. In 2020, China had an FDI stock of 3.7 billion US dollars in the DRC, most of which is supposed to be directed at the mining sector. This trend shows how Chinese companies generally have greater tolerance for working and investing in challenging environments.<sup>11</sup>

Given the dominant role of China, the member countries of the Organisation for Economic Cooperation and Development (OECD) have expressed growing concerns about the potential weaponisation of CRMs supplies. The first episode occurred in 2010, when Beijing halted REEs exports to Japan because of a political dispute,<sup>12</sup> which was a wakeup call for all importing economies. The embargo was lifted after importing countries filed a complaint to the World Trade Organisation (WTO). However, China has continued to coercively restrict its supplies and

<sup>&</sup>lt;sup>10</sup> Suleyman O. Altiparmak et al., "Cornering the Market with Foreign Direct Investments: China's Cobalt Politics", in *Renewable and Sustainable Energy Transition*, Vol. 7 (June 2025), Article 100113, https://doi.org/10.1016/j.rset.2025.100113.

<sup>&</sup>lt;sup>11</sup> Wenjie Chen, David Dollar and Heiwai Tang, "Why Is China Investing in Africa? Evidence from the Firm Level", in *The World Bank Economic Review*, Vol. 32, No. 3 (2018), p. 610-632, https://hdl. handle.net/10986/33529.

<sup>&</sup>lt;sup>12</sup> Keith Bradsher, "Amid Tensions, China Blocks Vital Exports to Japan", in *The New York Times*, 22 September 2010, https://www.nytimes.com/2010/09/23/business/global/23rare.html.

technologies. It blocked its graphite exports to Sweden in 2021<sup>13</sup> and imposed growing export restrictions on REEs, gallium, germanium and graphite as well as some REEs technology towards the United States and other countries as the ongoing trade war escalates.<sup>14</sup>

Given the economic and strategic opportunities of decarbonisation, new players have been attempting to enter the market, like Saudi Arabia and other Gulf Cooperation Council (GCC) countries.<sup>15</sup> Besides investing in domestic mineral capacity, these countries have increased their global footprint through overseas investments – potentially making them key partners in the diversification efforts. Their international presence is likely to expand due to their substantial financial resources combined with greater political acceptance from mineral-rich countries in light of less strings attached compared to European investments.<sup>16</sup>

Actions aimed at diversifying the global mineral value chains face several fundamental constraints. First, climate and industrial targets are supposed to be met by 2030, which means that new mineral supplies are needed in the short term. This leads to a second constraint, related to mining operations. While actions must be taken now, governments will have to deal with long procedures for opening new mines – on average ten-fifteen years. To sustain investment levels in new mining activities, companies and governments face another major risk: price volatility. As any capital-intensive industries, the mining sector requires price stability and enough price incentives to attract investments. Unfortunately, volatility has become a defining feature of several minerals markets - especially for those essential for EVs. Since 2021, all commodities markets have recorded a rising trend due to inflationary waves and constrained supplies. However, over the past two years prices have dropped (figure 4) because of the combination of new supply coming online, and slower clean tech demand (e.g., EVs).<sup>17</sup> Therefore, lithium prices have experienced substantial fluctuations in the past two years. Similarly, cobalt prices surged by over 100 per cent in 2021 only to fall by 30-40 per cent in 2022 and 2023.

<sup>&</sup>lt;sup>13</sup> Economist, "Why Is China Blocking Graphite Exports to Sweden?", in *The Economist*, 22 June 2023, https://www.economist.com/business/2023/06/22/why-is-china-blocking-graphite-exports-to-sweden.

<sup>&</sup>lt;sup>14</sup> Siyi Liu and Dominique Patton, "China Bans Export of Rare Earths Processing Tech over National Security", in *Reuters*, 22 December 2023, https://www.reuters.com/markets/commodities/chinabans-export-rare-earths-processing-technologies-2023-12-21.

<sup>&</sup>lt;sup>15</sup> Gracelin Baskaran, "Partnering with Middle Eastern Countries to Boost US Minerals Security", in *CSIS Commentaries*, 6 September 2024, https://www.csis.org/node/112225.

<sup>&</sup>lt;sup>16</sup> Diana-Paula Gherasim, "The Troubled Reorganization of Critical Raw Materials Value Chains. An Assessment of European De-risking Policies", in *IFRI Papers*, September 2024, https://www.ifri.org/en/node/50563.

<sup>&</sup>lt;sup>17</sup> Gracelin Baskaran, "Drivers of Base Metals Price Volatility", in *CSIS Commentaries*, 7 June 2024, https://www.csis.org/node/110951.



#### Figure 4 | Critical minerals prices, 2021-2024

Source: IEA, Global Critical Minerals Outlook 2024, cit., p. 38.

High price volatility entails different consequences for both consumers and producers. While consumers may benefit from low clean tech prices, these discourage new investments. Conversely, producers can collect higher windfall at high minerals prices even though they could see a demand reduction and the advent of new investments outside their country. This was particularly visible in the case of China's 2010 export ban on REEs to Japan, which spurred a wave of new investments and diversification efforts that resulted in the reduction of China's share in world's REEs reserves from 50 per cent in 2012 to 34 per cent in 2022.<sup>18</sup> Nonetheless, China can leverage its dominant position in both ways: either by restricting exports pushing upward prices and inflicting economic pain to its competitors as in the case of REEs and graphite against the United States; or by flooding the market depressing prices and affecting the profitability of new and alternative projects, as in the case of nickel.<sup>19</sup>

Despite the recent price drop, governments cannot overlook security of supply because of a growing wave of resource nationalism and export restrictions. The economic and geopolitical incentives have induced a rising number of countries to tighten control over mineral exports, including exports ban on raw materials with the clear objectives to incentivise local processing and ensure higher returns.<sup>20</sup>

<sup>&</sup>lt;sup>18</sup> Jared Cohen, Wilson Shirley and Klara Svensson, "Resource Realism", cit.

<sup>&</sup>lt;sup>19</sup> Gracelin Baskaran, "Drivers of Base Metals Price Volatility", cit.

<sup>&</sup>lt;sup>20</sup> Przemyslaw Kowalski and Clarisse Legendre, "Raw Materials Critical for the Green Transition. Production, International Trade and Export Restrictions", in OECD Trade Policy Papers, No. 269 (April 2023), https://www.oecd.org/en/publications/raw-materials-critical-for-the-green-transition\_ c6bb598b-en.html.

This was the case for Zimbabwe with lithium and Indonesia with nickel.<sup>21</sup> Other mineral-rich countries are reconsidering nationalising the mining industry. As of today, mineral-rich countries have not yet created cartels, like the Organisation of Petroleum Exporting Countries (OPEC), to coordinate output strategies in order to sustain mineral prices Still, key producers, especially those with high dependence on minerals exports, could decide to pursue this strategy for economic reasons; in early 2025, the DRC decided to ban for four months its cobalt exports due to oversupplied markets.<sup>22</sup> Other countries, like India, Argentina, Senegal, Vietnam and Kazakhstan, have introduced some export restrictions. Among these countries, China stands out with a wide range of export control measures for several REEs and graphite against the United States and other countries, motivated by a desire to retaliate against US tariffs and high-tech export controls.<sup>23</sup> As result, export restrictions on critical minerals have increased five times in the past fifteen years.<sup>24</sup>

The efforts to diversify suppliers and create alternative value chains clash with the potential social and environmental negative consequences. Mining and refining activities are characterised by high environmental footprint.<sup>25</sup> For example, the operations required for bauxite in Australia, REEs in China as well as copper and lithium in Chile have a high biodiversity impact. Overlooking these aspects undermines the political and financial acceptability of new projects. Additionally, companies may encounter local opposition and concerns for certain activities also due to water use as mining critical minerals, like lithium, is highly water intensive.<sup>26</sup> Furthermore, it is essential to ensure sufficient labour protection – especially for the most vulnerable groups like minors and indigenous people.<sup>27</sup> At the same time, diversification efforts and strategies need to consider how climate change may affect future projects. According to some estimates, over 70 per cent of cobalt and lithium production could face significant, high or extreme drought risks:<sup>28</sup> these trends may disrupt mining operations especially given the high geographical

<sup>&</sup>lt;sup>21</sup> "Zimbabwe Bans Raw Lithium Exports to Curb Artisanal Mining", in *Reuters*, 21 December 2022, https://www.reuters.com/world/africa/zimbabwe-bans-raw-lithium-exports-curb-artisanal-mining-2022-12-21.

<sup>&</sup>lt;sup>22</sup> Ange Aidhe Kasongo and Sonia Rolley, "Congo Bans Cobalt Exports for Four Months to Curb Oversupply", in *Reuters*, 25 February 2025, https://www.reuters.com/markets/commodities/congosuspends-cobalt-exports-four-months-counter-oversupply-bloomberg-news-2025-02-24.

<sup>&</sup>lt;sup>23</sup> Shobhan Dhir, Eric Buisson and Tae-Yoon Kim, "Growing Geopolitical Tensions Underscore the Need for Stronger Action on Critical Minerals Security", in *IEA Commentaries*, 9 February 2025, https://www.iea.org/commentaries/growing-geopolitical-tensions-underscore-the-need-for-stronger-action-on-critical-minerals-security.

<sup>&</sup>lt;sup>24</sup> Przemyslaw Kowalski and Clarisse Legendre, "Raw Materials Critical for the Green Transition", cit.

<sup>&</sup>lt;sup>25</sup> UN Environment Programme (UNEP) Finance Initiative, "Climate Risks in the Metals and Mining Sector", in Sectoral Risk Briefings, May 2024, https://www.unepfi.org/?p=75823.

<sup>&</sup>lt;sup>26</sup> Wetlands International, *World Water Day: The Water Impacts of Lithium Extraction*, 22 March 2023, https://europe.wetlands.org/?p=2193.

<sup>&</sup>lt;sup>27</sup> UN Department of Economic and Social Affairs (UNDESA), "Harnessing the Potential of Critical Minerals for Sustainable Development", in *World Economic Situation and Prospects 2025*, January 2025, p. 43-90, https://doi.org/10.18356/9789211070866c007.

<sup>&</sup>lt;sup>28</sup> PWC, Climate Risks to Nine Key Commodities. Protecting People and Prosperity, 2024, https:// www.pwc.com/gx/en/issues/esg/how-does-climate-change-affect-natural-resources.html.

concentration – not only at the national level, but also at the subnational level. Indeed, activities are concentrated in a limited number of locations within those countries: just five mines in the DRC produced most of the world's cobalt in 2020 and 81 per cent of the world's lithium is sourced from no more than ten mines.<sup>29</sup>

### 2. The European response: The CRM Act

EU efforts for secure CRM supply chains date to 2008, when the Union launched the Raw Materials Initiative.<sup>30</sup> The 2010 REEs ban against Japan imposed by China reinforced further the need to address overdependency. In 2011, the Commission created a list of CRMs for the European economy, which is regularly reviewed and updated. Indeed, the list was updated in 2014, 2017, 2020 and 2023. Over the decade, the number of CRMs under the list grew from fourteen in 2011 to 34 in the latest update in 2023. The expansion of minerals included in the EU list highlights the evolving relevance of critical minerals given the evolution of economic and industrial priorities. In 2020, the European Raw Materials Alliance was established with the goal of enhancing resilience and strategic autonomy for Europe's rare earth and magnet value chains by bringing together all relevant stakeholders.

Rising concerns are dictated by the combination of high import reliance and expected demand growth due to climate targets. In most of the cases, the EU is dependent on imports from non-EU countries (figure 5). For example, China is responsible for 100 per cent of EU's supply of heavy REEs, Turkey supplies 99 per cent of boron, South Africa 71 per cent of the EU's needs for platinum and an even larger share of iridium, rhodium and ruthenium. In light of this overdependence on imports, the EU needs to pursue a strategy to mitigate potential risks.

#### <sup>29</sup> Ibid.

<sup>&</sup>lt;sup>30</sup> Arthur Leichthammer, "Mining for Tomorrow: The Strategic Importance of Critical Raw Materials for Europe's Industry", in *Jacques Delors Centre Policy Positions*, 21 May 2024, https://www.delorscentre.eu/en/publications/detail/publication/mining-for-tomorrow.



#### Figure 5 | World map of the main CRM suppliers to the EU (2023)

Source: Milan Grohol and Constanze Veeh, *Study on the Critical Raw Materials for the EU 2023. Final Report*, Luxembourg, Publications Office of the EU, 2023, p. 10, https://doi.org/10.2873/725585.

Such strategy is needed because of EU's climate ambition. As result of the European Green Deal, indeed, the EU demand for CRMs is expected to increase significantly. According to Joint Research Centre forecast, the EU's demand is expected to skyrocket for many key CRMs in a high demand scenario (table 1).

**Table 1** | EU material demand forecast examples, high demand scenario, comparedwith 2020 level

EU demand in 2030	EU forecast demand in 2050
X 12	X 21
X 14	X 26
X 10	X 16
X 6	X 7
X 5	X 6
X 30	X 200
X 4	X 6
	EU demand in 2030 X 12 X 14 X 10 X 6 X 5 X 30 X 4

Source: Samuel Carrara et al., Supply Chain Analysis and Material Demand Forecast, cit.

In 2022-23, the EU considered the material side of its industrial policy. Therefore, the adoption of the EU Net-Zero Industry Act, which sets ambitious manufacturing targets for selected strategic clean technologies, was coupled with the adoption of

the EU Critical Raw Materials Act within the Green Deal Industrial Plan.<sup>31</sup> The CRM Act seeks to strengthen European strategic autonomy and economic reliance in line with the 2050 climate targets. The Act also creates a monitoring mechanism to mitigate the supply chain bottlenecks. Furthermore, it introduces different concepts for critical raw materials and strategic raw materials or SRMs (table 2). CRMs refer to materials characterised by a high risk of supply disruptions and their importance for the overall EU economy, while SRMs (seventeen out of 34 minerals in the list) are characterised by their importance for strategic areas including renewables, their projected demand growth and current supply as well as the difficulties of scaling up production. The de-risking strategy is pursued through the creation of a local European value chain and diversification of import routes.

**Table 2** | List of strategic (bold) and critical raw materials according to the EU CRM Act

Antimony	Arsenic	Bauxite/ aluminium	Baryte	Beryllium
Bismuth	Boron – <b>metallurgy grade</b>	Cobalt	Coking coal	Copper
Feldspar	Fluorspar	Gallium	Germanium	Hafnium
Helium	HREEs	LREEs	Lithium – <b>battery grade</b>	Magnesium <b>metal</b>
Manganese – <b>battery grade</b>	Graphite – <b>battery grade</b>	Nickel – <b>battery grade</b>	Niobium	Phosphate rock
Phosphorus	Platinum group metals	Scandium	Silicon metal	Strontium
Tantalum	Titanium metal	Tungsten	Vanadium	<b>REEs for permanent</b> <b>magnets</b> (Nd, Pr, Tb, Dy, Gd, Sm, and Ce)

Source: Author's elaboration on Annex 1 of: European Parliament Council of the EU, *Regulation (EU)* 2024/1252 of 11 April 2024 Establishing a Framework for Ensuring a Secure and Sustainable Supply of Critical Raw Materials, http://data.europa.eu/eli/reg/2024/1252/oj.

#### 2.1 The domestic dimension

The CRM Act sets ambitious benchmarks for the EU annual consumption by 2030: 10 per cent from local extraction; 40 per cent to be processed in the EU; and 25 per cent from recycled materials. As for domestic production, in the EU there are ideally mineral resources. Portugal is home to for instance, lithium. Europe's largest REEs deposit was found in the Kiruna area in northern Sweden in January 2023.<sup>32</sup> However, these resources have been overlooked due to lack of

<sup>&</sup>lt;sup>31</sup> European Commission, The Green Deal Industrial Plan: Putting Europe's Net-Zero Industry in the Lead, 1 February 2023, https://ec.europa.eu/commission/presscorner/detail/en/ip\_23\_510.

<sup>&</sup>lt;sup>32</sup> LKAB, Europe's Largest Deposit of Rare Earth Metals Located in Kiruna Area, 12 January 2023, https://lkab.com/en/press/europes-largest-deposit-of-rare-earth-metals-is-located-in-the-kirunaarea.

political commitment, social opposition and environmental concerns. To harness this potential, the Act allows certain projects to be designated as 'strategic', which would benefit from streamlined permitting processes. According to the Act, the permit-granting process will not exceed 27 months for extraction projects and fifteen months for others. As of today, permitting processes can last from five to ten years. To be considered as 'strategic', a project must make a meaningful contribution to the security of the EU supply of strategic raw materials as well as their sustainability. In March 2025, the Commission unveiled the first round of 47 Strategic Projects in Europe, covering fourteen of the seventeen strategic raw materials, with an expected overall capital investment of 22.5 billion euros.<sup>33</sup> These projects are located across thirteen member states and cover one or more segments of the value chain.<sup>34</sup>

Alongside extracting and refining minerals, the EU pays great attention to recycling. Through it, the EU could reconcile energy security with climate objectives by reducing extraction needs. Furthermore, recycling could be an economic opportunity. The EU is already at the forefront of the circular economy. More than 50 per cent of some metals (zinc and platinum) are recycled and cover more than 25 per cent of the EU's consumption. However, secondary production contributes only marginally for those needed for clean technologies (REE, gallium or indium).<sup>35</sup>

Lastly, the Act is considering measures to pool demand and establish mineral stockpiling to reduce its exposure to potential supply disruptions and price spikes. Estimates consider that the initial capital needed to accumulate a stockpile of one-year worth of the five critical minerals where China is the main source would be below 0.5 billion euros.<sup>36</sup>

#### 2.2 International dimension

Autarky is neither possible nor desirable as it would entail too high costs and the EU does not have enough mineral resources to satisfy its consumption. Therefore, security of supply through diversification is essential. In this sense, the Act stipulates that no single third country can supply more than 65 per cent of EU annual consumption of each strategic raw material at any relevant stage of processing. Based on this threshold, eight elements are considered as particularly

<sup>&</sup>lt;sup>33</sup> European Commission, Commission Selects 47 Strategic Projects to Secure and Diversify Access to Raw Materials in the EU, 25 March 2025, https://ec.europa.eu/commission/presscorner/detail/en/ip\_25\_864.

<sup>&</sup>lt;sup>34</sup> 25 projects extraction activities, 24 processing, 10 recycling and 2 substitution.

<sup>&</sup>lt;sup>35</sup> Milan Grohol and Constanze Veeh, *Study on the Critical Raw Materials for the EU 2023. Final Report*, Luxembourg, Publications Office of the EU, 2023, https://doi.org/10.2873/725585.

<sup>&</sup>lt;sup>36</sup> Daniel Gros, "A European Sovereignty Fund. Investing in Europe's Future and Security", in *EPRS In-Depth Analysis*, July 2024, https://www.europarl.europa.eu/thinktank/en/document/IPOL\_IDA(2024)760229.

problematic.<sup>37</sup> Supplies from China for bismuth, cobalt ore, magnesium, manganese and strontium are all above the 65 per cent threshold. Similar levels are recorded also for borates and feldspar from Turkey and beryllium from the United States.

This 65 per cent threshold embodies the de-risking approach (rather than the decoupling) by accepting current market and economic conditions. In this sense, supply diversification and international cooperation are essential. Among the measures proposed by the Commission, two are particularly relevant: the expansion of strategic partnerships and the creation of a critical raw materials club.

Figure 6 | Strategic partnerships signed by the EU



Source: Guillaume Ragonnaud, "Implementing the EU's Critical Raw Materials Act", in *EPRS Briefings*, November 2024, p. 7, https://www.europarl.europa.eu/thinktank/en/document/EPRS\_BRI(2024)766253.

The EU has expanded the establishment of strategic partnerships as it sets to continue to rely on imports. The EU Raw Material Diplomacy has led to the establishment of around fourteen strategic partnerships with different countries across the globe (figure 6).<sup>38</sup> African countries have gained a renewed political relevance and attention, with several partnerships or memoranda of understanding

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<sup>&</sup>lt;sup>37</sup> Marie Le Mouel and Niclas Poitiers, "Why Europe's Critical Raw Materials Strategy Has to Be International", in *Bruegel Analysis*, 5 April 2023, https://www.bruegel.org/node/8941.

<sup>&</sup>lt;sup>38</sup> European Commission DG for Internal Market website: *Raw Materials Diplomacy*, https://singlemarket-economy.ec.europa.eu/node/481\_en.

(MoUs) signed.<sup>39</sup> For instance, the EU signed strategic partnerships with Namibia in November 2022, the DRC and Zambia in October 2023 and Rwanda in February 2024. It has also strengthened cooperation with other like-minded players, like Canada, Greenland and Norway. Besides holding important reserves, this latter set of countries can ensure higher social and environmental standards and lower political risks.

The EU's external approach varies significantly from those adopted by the other two major economies: the United States and China. While China has mainly invested and struck deals for raw materials, the United States has tried to sign mineral deals in exchange for security, as in the cases of Ukraine and the DRC.<sup>40</sup> By contrast, the EU tries to move away from a transactional approach by promising joint and shared projects with its partners – especially in developing economies. By embracing such a more holistic approach, which includes mitigation, adaptation, regeneration and socioeconomic transformation, the EU could positively boost its climate diplomacy and enhance mineral security.<sup>41</sup> This vision is also visible with the proposal of a Critical Raw Materials Club, where resource-hungry and resource-rich countries collaborate in diversifying the CRM value chain.<sup>42</sup>

In June 2025, the Commission announced the first thirteen strategic projects located outside the EU; more specifically seven are located in countries with whom the EU has already a strategic partnership (Canada, Greenland, Kazakhstan, Norway, Serbia, Ukraine and Zambia), while the remaining ones are located in Brazil, Madagascar, Malawi, New Caledonia, South Africa and the United Kingdom.<sup>43</sup> These "13 Strategic Projects" are expected to need an overall capital investment of 5.5 billion euros to start operations.

#### 2.3 Italy's response

Italy has taken a few initial but important steps to address all the criticalities related to minerals. In June 2024, the Italian government adopted a 'decree-law'<sup>44</sup> to

<sup>&</sup>lt;sup>39</sup> Margherita Bianchi, "Diplomacy in the Era of Critical Minerals", in *World Energy Magazine*, No. 60 (March 2024), p. 38-42, https://www.eni.com/static/en-IT/world-energy-magazine/race\_for\_minerals.html.

<sup>&</sup>lt;sup>40</sup> Patrick Schröder and Armida van Rij, "Trump May Not Listen, but the US Should Cooperate with the EU on Ukraine's Minerals", in *Chatham House Expert Comments*, 17 March 2025, https://www. chathamhouse.org/node/36208; "The Guardian View on Donald Trump's Congo Deal: Mineral Riches for Protection", in *The Guardian*, 13 April 2025, https://www.theguardian.com/p/x22ned.

<sup>&</sup>lt;sup>41</sup> Olivia Lazard, "How the EU Can Use Mineral Supply Chains to Redesign Collective Security", in *Strategic Europe Commentaries*, 1 June 2023, https://carnegieendowment.org/europe/strategic-europe/2023/06/how-the-eu-can-use-mineral-supply-chains-to-redesign-collective-security.

<sup>&</sup>lt;sup>42</sup> European Commission, 2023 State of the Union Address by President von der Leyen, 13 September 2023, https://ec.europa.eu/commission/presscorner/detail/en/speech\_23\_4426.

<sup>&</sup>lt;sup>43</sup> European Commission, Commission Selects 13 Strategic Projects in Third Countries to Secure Access to Raw Materials and to Support Local Value Creation, 4 June 2025, https://ec.europa.eu/ commission/presscorner/detail/en/ip\_25\_1419.

<sup>&</sup>lt;sup>44</sup> A decree-law is an executive act with the force of law which however has to be converted into

align the country's legislative framework with the EU's one.<sup>45</sup> This development was needed as Italy's mining sector was regulated by a decree passed in the 1920s. However, the 2024 decree does not overrule the 1927 decree,<sup>46</sup> which needs to be updated especially regarding the environmental sustainability of the mining sector.

The new piece of legislation adopts a holistic approach, with the aim of streamlining the governance of CRM mining. On the demand side, the state has established a monitoring mechanism of strategic industries to assess current and future mineral demands. This is instrumental to conduct stress tests and evaluate the need of potential stockpile. On the supply side, the government has conducted a mapping of existing mineral resources. As of today, there are 76 operating mines, but in many parts of the country (Latium, Tuscany, Sardinia) there is significant potential for extracting lithium, copper, manganese, tungsten, cobalt, magnesite, REEs and others.<sup>47</sup> These resources could reduce Italy's high import reliance. Despite the fact that it is limited in terms of volumes, foreign dependence poses a threat to Italy's industrial competitiveness. For instance, a halt to imports of gallium, indium, tungsten (for a combined value of less than 100 million euros) could threaten over 35 billion euros of industrial production in key sectors.<sup>48</sup> Rising domestic production is thus essential for industrial competitiveness. However, these reserves have not been developed due to economic and environmental reasons.

To sustain the rebirth of its mining industry, Italy has established a strategic fund, endowed with 1 billion euros. This fund is similar to other European countries' financial instruments: Germany's 1 billion euro fund (KfW) and France's InfraVia (endowed by 2 billion euros). However, the Fund does not cover the entire value chain with a clear focus on extraction.

Besides mining activities, Italy has a great potential for recycling, including from mining waste, as recognised by the Commission in the first round of strategic projects: all four projects located in Italy are related to recycling activities of key minerals.

actual law by parliament within sixty days. It was later converted into actual law in August 2024. <sup>45</sup> Decree Law No. 84 of 25 June 2024: *Disposizioni urgenti sulle materie prime critiche di interesse* 

*strategico*, https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legge:2024-06-25;84.
<sup>46</sup> Domenico Savoca, "La normativa italiana sui minerali critici: come garantire un ruolo al nostro

paese", in *RiEnergia*, 13 June 2024, https://rienergia.staffettaonline.com/articolo/35507/La+normati va+italiana+sui+minerali+critici:+come+garantire+un+ruolo+al+nostro+paese/Savoca.

<sup>&</sup>lt;sup>47</sup> "La mappa delle materie prime critiche in Italia", in *QualEnergia*, 25 July 2024, https://www. qualenergia.it/?p=537945.

<sup>&</sup>lt;sup>48</sup> Iren, Osservatorio RigeneRARE and TEHA Group, *La roadmap italiana per le materie prime critiche*, 4 November 2024, https://www.ambrosetti.eu/news/la-roadmap-italiana-per-le-materie-prime-critiche.

Italy has increasingly worked on international partnerships, including with key European countries like France and Germany in 2023.<sup>49</sup> It has also joined multilateral initiatives, like the US-led initiative Mineral Security Partnership (MSP). Furthermore, it has established bilateral partnerships with Saudi Arabia, Egypt and Canada. These efforts can merge into the Italian foreign policy flagship initiative, the so-called Mattei Plan. The Plan aims to make Italy a bridge between EU and Africa by providing win-win partnerships. The greater focus on Africa provides new opportunities to design future collaboration projects. The Mattei Plan is endowed with 5.5 billion euro funds, which could be increased with resources from the Strategic fund.

### 3. Assessing EU de-risking strategy: Way forward

The EU's de-risking strategy addresses serious trade-offs and may be ultimately undermined by key shortfalls, particularly on the financial resources side. Although removing red tape is very much welcome, it is equally true that Europe will require significant amount of time to get any meaningful results. Regulatory measures, either through circular targets or shorter permitting times, will not be enough. New financial tools will be needed. To achieve any target, the EU faces a dilemma regarding economic security, fiscal discipline and leading industrial capacity.

Higher economic security entails a security premium to the already high capital investments required by the mining sector. For instance, the Commission estimated that a 27.9 billion euro investment by 2030 and 52.2 billion by 2040 are required to extract 100 per cent of its lithium demand for batteries domestically.<sup>50</sup> The investment need would drop to 7 billion euros by 2030 and 13.1 billion by 2040 in case of a 25 per cent target for production of raw materials needed for batteries. According to Eurometaux, meeting EU goals will require the opening of at least ten new mines, fifteen processing plants, and fifteen recycling plants.<sup>51</sup> However, the CRM Act fails to establish the financial power required to reach the different targets. Without adequate financial support, companies will be reluctant to invest in new projects – especially given the recent price drop.<sup>52</sup>

<sup>&</sup>lt;sup>49</sup> Italian Ministry of Enterprises and Made in Italy, *Materie prime critiche: Italia, Germania e Francia concordano una stretta cooperazione nei settori dell'estrazione, della lavorazione e del riciclo,* 26 June 2023, https://www.mimit.gov.it/it/notizie-stampa/materie-prime-critiche-italia-germania-e-francia-concordano-una-stretta-cooperazione-nei-settori-dellestrazione-della-lavorazione-e-del-riciclo.

<sup>&</sup>lt;sup>50</sup> Max Münchmeyer, Strategic Security andCritical Raw Materials: The Role of the European Investment Bank, Rome, IAI, July 2023, https://www.iai.it/en/node/17351.

<sup>&</sup>lt;sup>51</sup> EIT RawMaterials, Why Europe Must Act Now to Change Public Perception of Mining, 10 October 2024, https://eitrawmaterials.eu/node/2229.

<sup>&</sup>lt;sup>52</sup> Francesco Findeisen and Yann Wernert, "Meeting the Costs of Resilience: The EU's Critical Raw Materials Strategy Must Go the Extra Kilometer", in *Jacques Delors Centre Policy Briefs*, 30 June 2023, https://www.delorscentre.eu/en/publications/eu-critical-raw-materials.

The absence of any new, credible funding program is more striking if compared to that of other major economies like the United States and China. Indeed, China has worked relentlessly to provide financial assistance to its state-owned companies and producing countries to ensure enough supply. For its part, the United States has allocated over 8.5 billion US dollars for CRM projects under the 2022 US Inflation Reduction Act. A recent executive order issued by the Trump Administration on critical minerals aims to further boost financial support – with a clear domestic focus.<sup>53</sup>

These projects will require a combination of public investments, equity and derisking tools like investments guarantee support including the operating costs (OpEx) via tax subsidy.<sup>54</sup> As of today, the EU taxonomy includes only recycling of critical minerals. Thus, the EU should revise its taxonomy by adding mining and refining activities under the conditions of high environmental standards. This could help channel and attract private investments. Additionally, such approach would be very much welcomed also for the international dimension. The EU faces growing competition vis-à-vis other countries in the international mineral markets. The political commitment should be complemented by enough financial capabilities – also in challenging contexts. The case of Japan Organisation for Metals and Energy Security (JOGMEC) is particularly valid. At the same time, the EU can expand the use of market-based instruments such as contracts for difference and cap-and-floor models to stabilise costs and support off-takers.<sup>55</sup> Lastly, public resources should be channelled to research and development, training and upskilling programmes.<sup>56</sup>

Furthermore, the CRM Act sets unconditional targets for all minerals included in the list. A more granular analysis would be welcomed to inform policymakers and companies of the measures needed for enhancing EU economic security. Through better data and communication, the EU should outline which minerals can be outsourced and which ones are critical to produce domestically based on strategic and economic criteria.

The EU ambitions to expand mineral extraction and refining capacity may conflict with its stringent environmental standards and regulations. For instance, the EU biodiversity strategy sets a target for 2030 to protect at least 30 per cent of its land and sea areas, potentially restricting future mining operations. Furthermore, political opposition to mining projects has intensified, particularly concerning

<sup>&</sup>lt;sup>53</sup> Alexis Harmon and Reed Blakemore, "Four Critical Questions (and Expert Answers) about Trump's New Critical Minerals Executive Order", in *New Atlanticist*, 21 March 2025, https://www.atlanticcouncil.org/?p=835234.

<sup>&</sup>lt;sup>54</sup> Diana-Paula Gherasim, "The Troubled Reorganization of Critical Raw Materials Value Chains", cit.

<sup>&</sup>lt;sup>55</sup> IEA, *Global Critical Minerals Outlook 2025*, May 2025, https://www.iea.org/reports/global-criticalminerals-outlook-2025.

<sup>&</sup>lt;sup>56</sup> Luis Tercero Espinoza et al., "The Role of Research and Innovation in Ensuring a Safe and Sustainable Supply of Critical Raw Materials in the EU", in *EPRS Studies*, July 2024, https://www.europarl.europa.eu/thinktank/en/document/EPRS\_STU(2024)762848.

the environmental impacts of proposed large-scale lithium mining projects – for instance in neighbouring Serbia.<sup>57</sup> These concerns highlight the need for a comprehensive revision of the existing mining paradigm.

Furthermore, to ensure a sustainable future for the sector, the EU should invest in training programs aimed at developing the next generation of mining professionals. This is especially critical given the current shortages of expertise, a consequence of the mining sector's decline in Europe.

Lastly, competing demand needs may undermine European coordinated policy towards minerals. Indeed, the EU is witnessing the upheaval of conflicting priorities with growing tension between climate and defence goals. To manage and coordinate future supply, a clear governance framework both at the European and national level is a *conditio sine qua non*. The Critical Raw Materials Board established by the Act is certainly a positive step.

At the international level, the EU is facing growing challenges – starting from its traditional ally, the United States. Although there are strong arguments for deeper transatlantic cooperation on minerals, including within the OECD framework, significant differences and frictions between the United States and the EU are increasingly apparent. Mineral resources have become a source of political tension across the Atlantic, particularly considering renewed US interests in unconventional solutions, like seizing Greenland by a combination of political pressure and economic coercion and incentives.<sup>58</sup> These divergent approaches undermine implementation of coordinated initiatives, like the MSP and the idea of a CRM buyers' club.

Despite current disagreements as well as different economic and political conditions, the EU and United States share many vulnerabilities and priorities. Therefore, joint initiatives, including joint security standards, remain valid and desirable as way to channel investments and support secure supplies. Existing platforms like the Transatlantic Trade and Technology Council (TTC) can help overcome disagreements and set common standards in the mineral sector. The EU should also frame and improve communication in engaging Washington by identifying joint strategic projects for multiple sectors, namely digital, defence, military and energy.

It is also important to prevent the deterioration of relations that could undermine key joint projects and initiatives, such as the development of the Lobito Corridor. This railway and economic corridor linking Zambia, the DRC and Angola is the

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<sup>&</sup>lt;sup>57</sup> Arthur Neslen, "Activist Opposed to Rio Tinto Lithium Mine Receives Anonymous Death Threats", in *The Guardian*, 22 August 2024, https://www.theguardian.com/p/xvaec3.

<sup>&</sup>lt;sup>58</sup> Emily J. Holland, Joshua Busby and Morgan Bazilian, "Greenland's Minerals Won't Secure the U.S. Supply Chain", in *Energy World Blog*, 26 March 2025, https://nationalinterest.org/blog/energy-world/greenlands-minerals-wont-secure-the-u-s-supply-chain.

first strategic project under the G7 Partnership for Global Infrastructure and Investment (PGII) and it was announced in a US-EU joint statement in May 2023.<sup>59</sup> The PGII was created to counter Chinese infrastructure investments under the Belt and Road Initiative.

Lastly, the EU needs to revise its raw material diplomacy as strategic partnerships have yet to bear meaningful results. Lack of coordination within the EU and poor implementation have resulted in growing frustration in partner countries.<sup>60</sup> Furthermore, the EU should consider new tools to achieve robust results. Indeed, using exclusively its regulatory power, such as the Environmental, Social and Governance (ESG) and circularity standards, may not lead substantial and positive results for energy security. In re-imaging its diplomacy and partnerships, the EU needs to consider that traditional trade measures, such as reduction of tariffs, provide very limited benefits as around 90 per cent of CRMs imports are already exempt from tariffs.<sup>61</sup>

At the same time, the EU should carefully consider potential challenges of common and shared approach with like-minded and importing countries; for instance, a buyers' club. This approach does face several issues in terms of governance, economic incentives and just transition.<sup>62</sup> Regarding the just transition dimension, the goal of a buyers' club would be to lower mineral prices (as opposite to sellers' club like OPEC). This could significantly harm emerging economies that rely on extractive industries.<sup>63</sup> Acknowledging also the needs of many of mineral-rich countries is essential to design a more credible CRM diplomacy. Nonetheless, joint demand mechanisms and frameworks among importing countries could send the economic signal to sign off-take agreements. These joint initiatives should marshal investments also in midstream and downstream activities abroad.<sup>64</sup> Besides the US, the EU should also work closely with other OECD countries that have clean industrial targets and industries.

<sup>&</sup>lt;sup>59</sup> European Commission DG for International Partnerships website: Connecting the Democratic Republic of the Congo, Zambia and Angola to global Markets through the Lobito Corridor, https://international-partnerships.ec.europa.eu/node/2801\_en.

<sup>&</sup>lt;sup>60</sup> Poorva Karkare, "The EU's Partnerships around Critical Raw Materials: Do Its Ambitions Match Reality?", in *ECDPM Commentaries*, 26 March 2025, https://ecdpm.org/work/eus-partnerships-around-critical-raw-materials-do-its-ambitions-match-reality.

<sup>&</sup>lt;sup>61</sup> Francesco Findeisen, "The Club Approach: Towards Successful EU Critical Raw Materials Diplomacy", in *Jacques Delors Centre Policy Briefs*, 31 October 2023, https://www.delorscentre.eu/en/publications/critical-raw-materials-club.

<sup>&</sup>lt;sup>62</sup> Cullen S. Hendrix, "Why the Proposed Brussels Buyers Club to Procure Critical Minerals Is a Bad Idea", in *PIIE Policy Briefs*, No. 23-6 (May 2023), https://www.piie.com/node/16362.

<sup>&</sup>lt;sup>63</sup> Ibid.

<sup>&</sup>lt;sup>64</sup> Francesco Findeisen, "The Club Approach", cit.

### Conclusions and policy recommendations

Current market conditions and fundamentals provide enough minerals to global markets. However, growing geopolitical competition and more assertive trade and foreign policy by great powers have created enough political signal for reevaluating the sustainability of current value chains. This political signal has already generated the increase of global minerals reserves and the addition of new players to the minerals industry. However, geographical concentration in China, especially in the mid and downstream, will be particularly difficult to change.

Market concentration and expected demand growth call on importing countries to pursue de-risking and diversification strategies. In this effort, the EU has adapted its framework to deal with its high import dependence. To achieve any meaningful results, the EU needs to address issues related to funding. As of today, the EU has not provided any new meaningful financial instrument aimed at building both local and international minerals projects. This should be part of the upcoming negotiations for the seven-year budget for 2028-2035, the multiannual financial framework (MFF). Furthermore, it should consider ensuring financial support not only for the capital investments (CapEx), but also for operating costs (OpEx) of strategic mineral projects. The EU needs to adapt its taxonomy and allow financial institutions to invest in all segments of CRMs supply chains also abroad.

Although direct investment is essential, the EU can overcome some financial constraints through the use of market-based mechanism, such as contracts for difference (CfD) and cap-and-floor models to support offtake and stabilise costs. Furthermore, coordinated procurement mechanisms will ensure demand security which is essential for investments in mineral-rich countries. These mechanisms will require better governance coordination both among and within EU institutions and member states.

Cooperation is crucial as independence is impossible. Having similar concerns, there are strong arguments for joining forces with other like-minded countries, including the US despite recent tensions. For these countries, it is crucial to work proactively with mineral-rich countries in a collaborative way. By doing so, the EU and its partners could exploit existing opportunities in key areas, like Africa. Particularly, Italy has the opportunity to shape future EU-Africa relations by integrating CRMs into its Mattei Plan. Although the country has some mineral resources, it will benefit of a more coordinated mineral diplomacy.

Updated 17 June 2025

## List of acronyms

CapEx	Capital expenditure
CfD	Contracts for Difference
CRM	Critical raw material
DRC	Democratic Republic of the Congo
ESG	Environmental, Social and Governance
EU	European Union
EV	Electric vehicle
FDI	Foreign Direct Investment
GCC	Gulf Cooperation Council
HREE	Heavy Rare Earth Element
IEA	International Energy Agency
JOGMEC	Japan Organisation for Metals and Energy Security
LREE	Light Rare Earth Element
MFF	Multiannual financial framework
MoU	Memorandum of understanding
MSP	Mineral Security Partnership
OECD	Organisation for Economic Cooperation and Development
OPEC	Organisation of Petroleum Exporting Countries
OpEx	Operating expense
PGII	Partnership for Global Infrastructure and Investment
REE	Rare earths element
SRM	Strategic raw material
TTC	Trade and Technology Council
US	United States
WTO	World Trade Organisation

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