

## Policy Brief

# Meeting the costs of resilience: The EU's Critical Raw Materials Strategy must go the extra kilometer

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#CriticalRawMaterials

#NetZero

#Resilience

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Europe's green transition is expected to generate a substantial increase in demand for critical raw materials (the same holds true for the digital transformation that lies outside this inquiry). European firms heavily rely on imports for these minerals, with a significant amount coming from China. This geospatial concentration of supply chains exposes Europe's climate and green industrial policies to significant geopolitical risks. This complex of issues prompted the European Commission to introduce the Critical Raw Material Act in March 2023. Albeit a valuable addition to Europe's strategic autonomy agenda, the Act does not rise to the scale of the challenge. Internally, it aims to develop a European value chain for critical raw materials by streamlining permitting processes without committing any new funds. Externally, it reframes existing trade instruments and partnership initiatives without providing a step-by-step schedule for tapping into new sources of supply. If the EU is intent on reducing its vulnerabilities it must recognize that resilience comes with a price tag. It needs to marshal meaningful European funding and administrative support provisions, set realistic diversification requirements for European companies via regulation, and back its external trade and partnership strategies with convincing resources.

The EU is in a global race for critical minerals to fuel its green transition. If countries fulfill their climate commitments, [global demand for materials such as rare earths, cobalt, or nickel will, on average, quadruple](#). For some materials, the Commission expects European demand to increase even more than that. Meanwhile, European supply relies heavily on imports from a handful of countries, particularly China. [This has caused growing concerns among EU policymakers, as well as those elsewhere](#). Geoeconomic tensions, supply disruptions, and external shocks could potentially leave the EU's green transition stranded and wreak havoc throughout its industries.

**The big question is how Europe can bridge this looming supply gap.** For the EU, this is especially complicated. For one, import tariffs on most Critical Raw Materials are already low and the room to incentivize import diversification through the classical trade levers is limited. At the same time, European deposits of Critical Raw Materials are limited, mining has been in retreat for decades and building domestic capacities will take time as well as a lot of money. Whichever way one looks at it, there are no simple solutions.

**Nonetheless, the Commission has now proposed a [Critical Raw Materials Act](#). The Act is big in ambition and a welcome move to put the issue of strategic dependencies at the top of the European policy agenda.** However, when it comes to concrete measures, it is by and large business as usual. It does not include any new funding from the stretched EU budget, fails to establish a credible business case for investments in a European value chain, lacks concrete resources to deliver access to new projects in third countries, and shies away from binding regulation aimed at corporations. In its current form, the Critical Raw Materials Act is a mouse.

**To solve the problem, the EU will have to face a simple truth: Economic resilience has a price tag.** If the EU wants to make good on the goal of reducing vulnerabilities, it will have to deal with the trade-offs. This requires three main changes: first, it needs to marshal substantive European funding and administrative support provisions. Second, it needs to establish achievable diversification requirements for European companies through regulation. And third, it needs to equip its external trade and partnership strategies with meaningful resources.

### **1 The Critical Raw Materials Act: context, objectives, measures**

**The net-zero transition is highly dependent on critical raw materials, and the supply chains for these minerals are heavily concentrated in a limited number of regions.** Net-zero technologies are much more mineral intense than their conventional counterparts, which often rely on fossil fuels. The construction of an offshore wind plant, for example, requires nine times more minerals than a comparable gas plant. An electric car typically requires six times more minerals than an internal combustion engine car.

To reach the Paris goals, the [International Energy Agency](#) estimates that demand for critical raw materials will quadruple by 2040. Specific estimates vary by resource and sector. The demand for rare earths, essential for wind turbines and electric motor technology, could rise from anything between three to seven times, depending on technology choices and policy support. The demand for lithium, crucial for electric vehicles and solar energy, will likely increase 40-fold by 2040.

The uneven distribution of supply chains makes it harder to reliably source critical raw materials worldwide. In 2020, Australia dominated global lithium extraction, accounting for 53%, followed by Chile and China with 21.5% and 10%, respectively. However, China processed close to 60% of the material. The situation is even more imbalanced for rare earth elements, with the People's Republic extracting 60% and refining nearly 90% of the world's total.

**Figure 1. Quantity of minerals used for selected technologies**

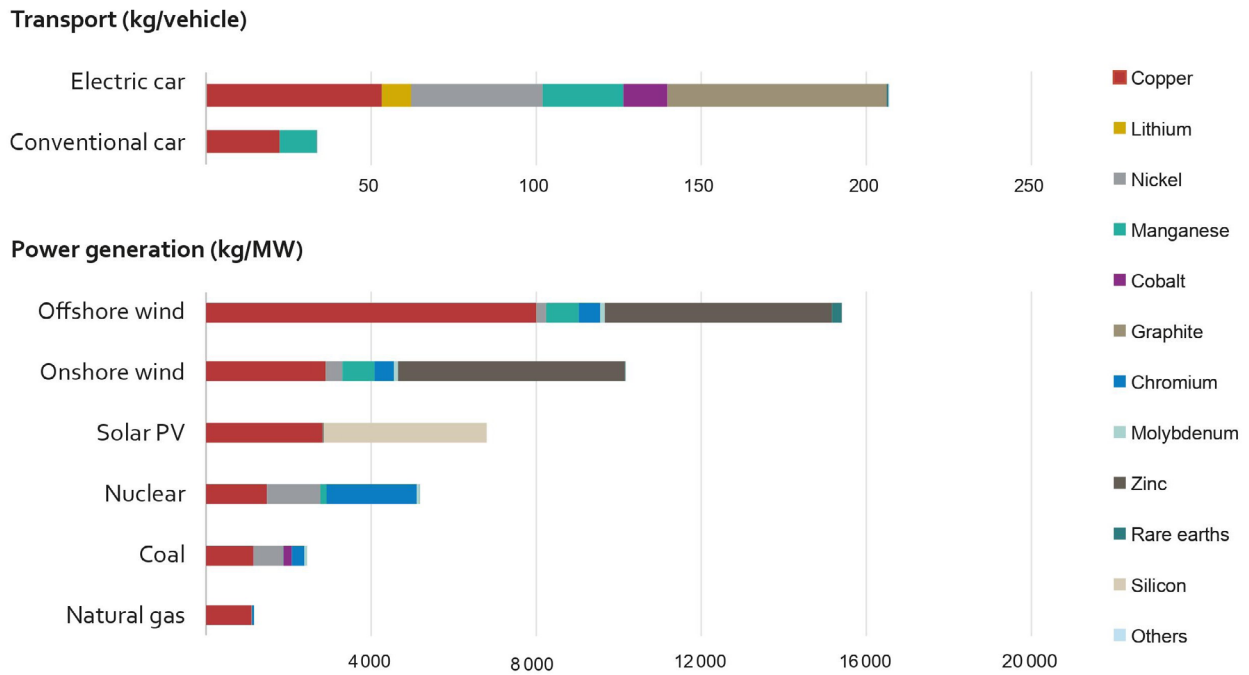


Figure adapted from: *International Energy Agency (2021). The Role of Critical World Energy Outlook Special Report.*

The situation in Europe mirrors the global scenario. The EU's green transition is predicated on significant quantities of critical raw materials. The [Commission forecasts](#) that the demand for rare earths and lithium alone is expected to increase 5-12 times and nearly 60 times, respectively, by 2050. In 2020, over 98% of the EU's rare earths imports came from China and 78% of its lithium needs were sourced from Chile. The geospatial concentration of strategic supply chains renders the EU single market vulnerable to the [weaponization of this interdependence](#) by third countries and to external shocks.

**Figure 2. The concentration of the EU's critical raw material imports**

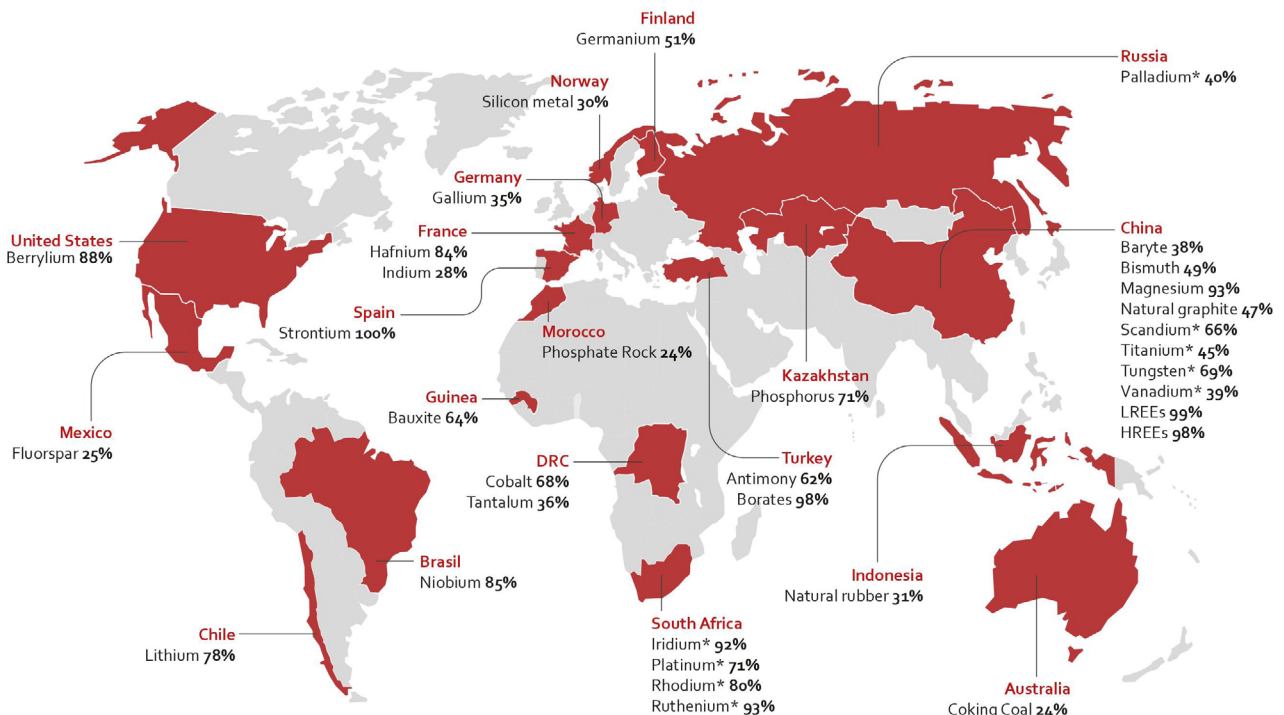


Figure adapted from: *European Commission (2020). Action Plan on Critical Raw Materials.*

\*share of global production

**The Critical Raw Material Act seeks to change that.** Building on the 2020 New Industrial Strategy, it defines a list of raw materials that are key inputs for strategic sectors in zero-carbon and digital industries and are exposed to high supply risks. It requires member states to identify large firms with major resource needs and to monitor and coordinate the auditing and stress-testing of their supply chains. Reporting from smaller firms will remain on a voluntary basis. The Commission's Critical Raw Materials Dashboard will aggregate and make publicly available this information. Furthermore, the Act aims to **enhance Europe's economic resilience and strategic autonomy in alignment with the timeline of the European Climate Law through two key approaches: First, by building a local European value chain for critical raw materials. Second, by diversifying import routes for these minerals into the EU.**

### *Building a European value chain*

**The first measure to increase supply chain resilience is to source more critical raw materials in Europe.** In simple terms, this means extracting and processing more minerals regionally. To achieve this, the Act aims to establish a domestic value chain of critical raw materials. This value chain should be able to supply 10% of the region's critical raw materials needs and refine 40% of these materials by 2030. Further, the plan involves the construction and expansion of recycling plants within the EU to meet 15% of the raw materials requirements through recycling. But this can only be a long-term solution.

**First, the Act envisions the creation of a Strategic Projects framework, designed to attract investments into European critical raw materials projects by accelerating permitting procedures and providing contingent financial support to project promoters.** Private promoters apply to a new Critical Raw Material Board for Strategic Project designation. The board is composed of representatives from member states, who will be hosted and funded by the Commission. If granted, the Strategic Project designation elevates private undertakings to European public interest status and entitles them to a one-stop-shop for planning and development consent with set timelines for planning permission. Member states reserve the right to override the Board's decisions. Once Strategic Project promoters file for planning permission, authorities must decide on a resource extraction project within 24 months. They must decide within 12 months on a processing or recycling project. The Act foresees up to 3 months of contingency for exceptionally complex applications. Consulting public stakeholders should take no longer than 90 days. The Act asks member states to support Strategic Project promoters in securing public acceptance. And it encourages land use authorities, at national, regional, and local levels, to have regard for the siting and permitting procedures in their plans when it comes to critical raw materials.

**The Act further envisions the sharing of financial risks between strategic project promoters, member states, and their public financial institutions through specific instruments.** Towards these ends, the Act establishes a sub-board within the Critical Raw Materials Board, composed of InvestEU implementing partners, crucially the European Investment Bank Group, which makes recommendations on project preparation and financial assistance. It foresees a strategic role for the InvestEU Advisory Hub, the technical assistance facility supporting the implementation of the European Green Deal. Further, the Act makes provisions for off-take agreements, which lock in the price at which Strategic Project promoters can sell their resources over a defined period.

**Third, the Act authorizes the EU to identify environmental standards and screening criteria with which raw materials mined, refined, and recycled in the European Union must comply.** This will include labels to allow market participants and the public to assess the sustainability of critical raw materials supply. The Commission's aim is to strengthen the

public acceptance and attractiveness of a European raw material value chain and its exports. This would further incentivize private co-investment.

#### *Diversifying Europe's international supply chains*

**The second measure to reduce concentrated dependencies is to diversify imports by allocating more funding to new critical raw materials projects in developing and emerging economies, in return for privileged access.** Established trade policy instruments have [limited potential for import diversification](#). The EU boasts the world's largest trade agreement network, covering 72 countries. In combination with most-favored-nation tariff clauses, this network already exempts 92% of critical raw materials from tariffs. To offer development finance assistance to external mining, refining, and recycling projects, the Critical Raw Materials Board would collaborate with the European Commission to identify suitable projects. The Board would ensure that these external Strategic Projects contribute to supply chain diversification by incorporating primary, refined, or recycled raw materials into Europe's value chains and adding value to the production process in third countries. It would ensure that these projects are structured in alignment with the Global Gateway strategy, which directs EU development finance towards strategic international infrastructure projects.

## **2 The Act fails to acknowledge the costs and tradeoffs of resilience**

**The Critical Raw Materials Act may well be an important step in addressing the dependence of Europe's green transition on concentrated supply chains for critical raw materials but, it fails to manage the timely diversification of critical raw materials supply chains by ignoring the price tag for resilience.** It lacks the fiscal and administrative resources to provide a credible business case for European mining projects, its external dimension remains largely declaratory, and it shies away from meaningful corporate regulation.

#### *Strategic Projects are time-consuming and high-risk investment propositions*

**The establishment of a domestic critical raw materials value chain is a crucial strategic objective for Europe, given the immense demand for these resources.** Every incremental increase in supply will enhance the EU's resilience against external shocks and geoeconomic risks, while helping to develop and deploy net-zero technologies in the global fight against climate change. And it would enable the EU to assume responsibility and leadership in holding the value chain accountable for human rights and environmental standards. Raw materials are frequently embedded in contexts where these rights and standards are inadequately monitored, if not systematically violated. Mined and processed in the EU, critical raw materials would meet high environmental and labor standards. For all these reasons, the Critical Raw Materials Act must indeed make a European value chain an urgent priority. However, it fails to acknowledge the considerable time and financial investments required.

**Developing a European value chain in critical raw materials is predicated on the implementation of high-risk projects, accessible only to a limited number of large corporations, particularly in extraction.** These require substantial capital investments over extended periods, with uncertain rates of return at the time of investment. Mining companies must engage in geological exploration, finalize feasibility studies, and complete environmental and exploitation permitting procedures. They must also navigate planning consent procedures, consult with affected communities and stakeholders, and properly address any objections through mitigation and compensation measures. The construction phase is complex and often involves tunneling works, which can span several years. Evidence

suggests that it takes at least [capital investment of €500 million](#). Moreover, the average mine takes [15.3 years](#) to progress from exploration to completion, with the exploration and feasibility study phase lasting 11.9 years, planning 1.5 years, and construction 2.3 years. Furthermore, once projects are operational, raw materials prices may fluctuate due to energy costs and market conditions. These risks are compounded by specific territorial conditions and resource profiles, making it challenging for corporations to transfer lessons learned and expenditures from one investment to another. Consequently, mining companies have so far been reluctant to invest in a European value chain, and any future investments will likely be contingent on comprehensive project risk interventions by public authorities.

**Complexities are compounded by the massive infrastructure investment needs accompanying Strategic Projects.** Especially when located in remote areas, mining, refining, and recycling facilities will have to be connected to transport, water, wastewater, and electricity systems. And a specialized skills base will be necessary at every stage of the value chain, and this is not readily available in Europe. The Critical Raw Materials Act does not address the question of who should bear the cost of these investments, relying instead on discretionary contributions from both public and private entities.

*The Strategic Projects framework falls short of creating a business case for investment*

**To increase domestic extraction, the Critical Raw Materials Act focuses largely on faster permitting. Two main issues then arise. First, permitting alone is unlikely to substantially speed up the process and could end up doing more harm than good.** The prolonged lead times for raw material extraction projects are primarily attributed to the exploration and project preparation phase, which falls under the responsibility of mining companies. However, these companies tend to [underinvest in this phase](#). With notable exceptions, the planning consent procedures, beginning with the filing of a planning application and overseen by public authorities, contribute relatively little to overall lead times. Hastening these procedures or imposing rigid timelines would, thus, have limited impact on accelerating Strategic Project development.

**What's more, a permitting shock could strain public consultation processes.** If permitting procedures are accelerated, they risk overstressing the administrative capacities of planning authorities, as these have to accommodate many stakeholders and consider their input. Chances are that mining companies will have to make possibly far-reaching modifications to their construction and exploitation plans during these processes, as well as propose adequate mitigation measures, which again would have to be reviewed and approved by planning authorities. As a result, there is an increased likelihood of environmental, human, and indigenous rights violations where permitting procedures are unduly accelerated. Legal challenges might arise and public opposition and discontent grow. The issue is compounded by the fact that Strategic Projects are often situated in remote or conservation areas, or on lands where indigenous communities hold rights. In such cases, consultation, compensation, and relocation procedures that are perceived as fair by affected communities and in accordance with the law are likely to take longer than the prescribed timelines.

**Second, the Act lacks budgetary provisions to ensure that the financial de-risking envisioned by the Strategic Projects framework will attract private investments at scale.** To avoid funding provisions, the Critical Raw Materials Act proposes that InvestEU implementing partners de-risk investments for Strategic Project promoters through financial guarantees and debt products. InvestEU is a guarantee fund the European Commission set up to mobilize private investments for its policy priorities. It assists those European promotional



banks that are implementing partners with sharing risks with project promoters. As public financial institutions, however, their business model relies on borrowing cheaply on international capital markets. This depends in turn on equity and guarantee support from public shareholders, the expertise of the institutions' staff in engineering and finance, and corporate governance frameworks modeled after investment banks. In other words, were these institutions to provide support to complex raw materials projects on a large scale, they would risk jeopardizing their own operational capacity and independence.

**As the Critical Raw Materials Act sets out no plans to equip InvestEU with additional public resources it will fail to realize significant new investments in critical raw materials.** Without additional public financial support, implementing partners are unlikely to support Strategic Projects at scale as this would put pressure on their credit rating and tie up significant administrative and balance sheet capacities. Alternatively, implementing partners could rely on indirect instruments, such as financial guarantees, to minimize the resources they would tie up when supporting raw materials projects, rather than on direct instruments, for example, a loan. However, this strategy would be counterproductive because it would [leave construction risks unaddressed](#), thereby failing to make raw materials projects more attractive to investors.

And even if it did unlock investments, it would undermine implementing partners' ability to impose conditionalities on financial support, including environmental standards and risk-sharing arrangements with project promoters. For instance, the [European Investment Bank \(EIB\) did not increase its investments in higher-risk projects under the European Fund for Strategic Investment \(EFSI\)](#) as envisioned under Commission policy. This was due to the requirement of mobilizing a target investment volume of €500 billion euros with no more than €16 billion euros of EU support. **In a nutshell, investing in a domestic critical raw materials value chain makes sense, but it takes a lot of time and money. Instead of focusing on accelerating permitting and providing contingent financial assistance, the Critical Raw Materials Act needs substantive resources to make its business case.**

*The external diversification strategy remains declaratory*

**The second leg of the Critical Raw Materials Act focuses on the diversification of external supply chains.** The [Communication](#) accompanying the Critical Raw Materials Act acknowledges that the EU will continue to rely heavily on imports of critical raw materials, even as efforts get underway to develop a European value chain. Even in the best-case scenario, a European value chain can only cover a small share of EU critical raw materials needs. Moreover, classical trade deals will not help that much. While the Act mentions new trade agreements with dedicated Critical Raw Materials chapters, trade barriers for critical raw materials are already low. Thus, new trade agreements are unlikely to yield added incentives for European firms to diversify their supplier base.

**External diversification will depend on, first, European funding for infrastructure investments in third countries through programs like Global Gateway,** tied to privileged access to these resources. This will, again, require money and the Critical Raw Materials Act does not spell out sufficiently where this money should come from. And the Act does not adequately incorporate geoeconomic risks in the section criteria for these projects. [Export restrictions on critical raw materials introduced by countries](#) such as China, India, Argentina, the Democratic Republic of Congo, Senegal, Vietnam, or Kazakhstan illustrate the importance of strategically anticipating politically engineered supply disruptions. **Second, diversification requires the forging of new resource-sharing alliances and partnerships with third countries,** such as the establishment of a Critical Raw Materials Club, in which members coordinate efforts to invest in extraction in third countries and, at the same time, pledge to support each other if supply is disrupted. Again, the Communication

accompanying the Critical Raw Materials Act and the recently released [Communication for the European Economic Security Strategy](#) endorse the idea of such a club. However, the Critical Raw Materials Act, along with these communications, lacks clarity on a roadmap for how to get there.

### 3 Policy recommendations

**The Critical Raw Materials Act makes a crucial contribution to Europe's strategic autonomy agenda, but it fails to address the sheer magnitude of the challenge.** If the EU intends to reduce its economic vulnerabilities, it must recognize the costs associated with achieving resilience. This requires three changes to the proposed Act: first, the EU must mobilize substantial funding and administrative provisions at European level. Secondly, it should dedicate significant resources to its external trade and partnership strategies. And third, it should establish feasible diversification requirements for European companies.

#### *Need for European public funding*

**The Critical Raw Materials Board should be endowed with a meaningful budget for supporting the Strategic Project framework and the sharing of administrative and financial risks.** First, member states should receive funding for permanent staff or assistance through project-based secondments from the EU. This is necessary to ensure sufficient capacities for public consultation, mitigation, and compensation procedures in a shorter time frame. It would also allow public authorities to ensure the human, environmental, and local law compliance of Strategic Project promoters. Second, InvestEU implementing partners should receive capital or guarantee support from the Board to aid in the promotion of strategic projects. This will enable these institutions to enhance investments in Europe's critical raw materials value chain by providing direct lending to Strategic Projects without compromising their business model. Furthermore, it will give them the necessary resources to tie financial assistance to conditionalities and divvy up strategic project risks and benefits among investors and European publics.

**Though the development of a domestic critical raw materials value chain is a European public good, not all member states may be able to undertake the necessary investments.** Mining, refining, and extraction projects should be situated in regions where they contribute the most to a European value chain. The geographical distribution of these investments should not be shaped by the financial and administrative capacities of member states, making European support through the common budget ineluctable if one is to ensure equitable development across the region.

#### *Need for a comprehensive international diversification strategy*

**The Critical Raw Material Act should be complemented by a comprehensive strategy aimed at diversifying the EU's supply chains externally.** First, the EU should intensify its efforts to establish new trade agreements and renegotiate existing ones, particularly those lacking specific chapters on critical raw materials, to avoid export restrictions. Recently, the EU signed an [agreement with Argentina](#) in line with the Global Gateway strategy, and setting it in motion promptly is now urgent. Previous attempts to enhance European supply chains through bilateral agreements did not result in any significant diversification. For instance, the [partnership with Greenland in 2012 regarding rare earth metals](#) did not materialize into a new supply source. To emphasize critical urgency, repeated political commitments at the highest level and swift implementation are necessary.



**And secondly, the EU should invest diplomatic capital in the development of the Critical Raw Materials Club, ensuring that it goes beyond mere coordination.** The Club should include binding assistance clauses in the event of geopolitical pressure, providing resilience against the weaponization of raw material supply by any third country. By pooling resources and establishing shared response mechanisms, asymmetrical interdependencies can be managed. If the supply of critical raw materials were to be weaponized against one member of the club, every other member state would be obligated to react and mobilize the means at their disposal to avert a supply shortage for the concerned state. Such an approach serves the strategic interests of like-minded countries and would be a real game-changer.

*Need for regulations targeting corporate supply behavior*

**Finally, the best domestic sources and most diverse possible import routes will help little if companies do not use them.** Current sourcing among European manufacturers is more concentrated than it needs to be when compared to the global geography of raw materials extraction and refinement. In 2020, Australia accounted for 53% of lithium extraction globally followed by Chile and China with 21.5% and 10% respectively. China extracted 60% and refined almost 90% of the world's total rare earth supply. The same year, however, European firms sourced over 98% of the EU's rare earths from China and 78% of its lithium from Chile. In other words, European firms could have already sourced, for example, more rare earths from Malaysia and more lithium from Australia. Last but not least, the EU should examine the case for more binding regulations to steer corporate supply behavior.

**To influence corporate behavior, the European Commission should introduce requirements for diversification of critical raw material provisioning into regulatory frameworks and green industrial policies.** These measures should be applicable only if alternative supply sources exist and if the concentration of European corporate supply chains exceeds global levels. Critically, access to subsidies and other forms of support should be granted or revoked retrospectively based on whether companies source less than 65% of any specific critical raw material from a single country, excluding the EU as a region. Moreover, resilience requirements could be integrated into the criteria for public procurement. The [Net Zero Industry Act](#) already entails such provisions on sustainability and resilience. Contracting authorities should specify thresholds for critical raw materials diversification and incentivize the use of alternative material technologies in tendering and contract award processes. Similarly, access to any critical raw materials stockpiles should be granted only to companies that can demonstrate diversified supply chains.

**Furthermore, the EU should realign market incentives to enhance the resilience of European supply chains and strengthen international environmental standards while ensuring their effective implementation.** On one hand, the EU should promote a level international playing field by incorporating the negative externalities of mining into production costs, thereby raising global environmental and social standards. This approach leverages the strengths of Europe's single market, characterized by the rule of law, leading environmental and human rights standards, excellent infrastructure, and ecologically sound use of modern technology. It would thereby help revive Europe's mining sector in a sustainable way.

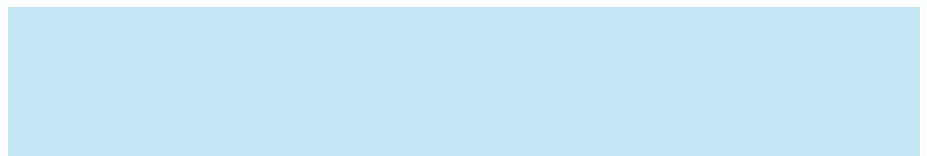
**On the other hand, the EU should reinforce international regulations and incentivize companies to source from more sustainable suppliers than they do today.** Failing to do so poses a threat to resilience, increasing the likelihood of social conflicts such as the [Marikana mine strikes](#) and resulting bloodshed in South Africa, as well as ecological catastrophes like the [tailing dam collapse in Brumadinho](#), Brazil. These events illustrate the inherent risks of violations of corporate labor and environmental standards and discourage extensive investments in mining. Existing certification schemes and due diligence requirements at the national and European levels have thus far failed to yield significant

results in encouraging more companies to adopt and improve sustainability practices. Merely implementing a gradual best-in-class approach to promote sustainability masks the substantial deficiencies in meeting sustainability standards, both in relative and absolute terms, within extraction activities. Therefore, it is crucial to complement the Critical Raw Materials Act by implementing a comprehensive Corporate Sustainability Due Diligence Directive and promoting the growth of sustainable suppliers over time. This effort should also [encompass the financial sector](#). Only by swiftly modifying market incentives can the EU regain its position in the mining sector and facilitate necessary investments beyond the EU.

#### 4 Conclusion

**The Critical Raw Materials Act makes a crucial contribution to Europe’s strategic autonomy agenda. But it does not rise to the scale of the challenge.** If the EU wants to reduce its economic vulnerabilities it must acknowledge that resilience comes with a price tag. It needs to marshal substantive European funding and administrative support provisions, establish achievable diversification requirements for European companies through regulations, and equip its external trade and partnership strategies with meaningful resources.

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