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Executive Summary

Reducing Raw Material Consumption: Why Less Is More

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Intro: About demand reduction

Metallic raw materials are finite. Their exploitation causes ecological pressure, destruction and, in many cases, severe human rights violations. Moreover, access to raw materials is highly competitive, further elevating existing pressures. Yet German and European raw material policies continue to focus primarily on securing ever larger quantities for their domestic industries. The rising demand is frequently attributed to digitalization, mobility, renewable energy, artificial intelligence and defence. What is largely missing from the political debate is a more fundamental question:

What should limited raw materials be used for, and which social and environmental costs are societies willing to accept for their extraction?

In the global competition for raw materials, Europe is not able to match the geopolitical influence and financial power of the United States and China as well as other actors. Hence, Europe must develop strategies that focus on just partnerships and mutual interests including the needs of marginalized people.

Rather than competing for ever larger quantities of primary resources, the EU needs to reduce its raw material demand and encourage innovation in the field of resource-light technologies. This can reduce social and environmental pressures in mining regions and strengthen resilience and competitiveness. It would allow for more equitable raw material partnerships based on lower material demand, respect for human rights, local value creation and greater economic self-determination in resource-rich countries.

As major consumers of raw materials, Germany and the EU have significant influence on global demand for metallic raw materials and on the social and environmental impacts associated with their extraction. Germany has to import almost all of its metallic primary raw materials. In 2022, its consumption amounted to approximately 760 million tonnes of raw material equivalents of metallic resources including exports – two tonnes per capita without exports. Germany's per capita resource consumption is around 3.5 times above the per capita average of the African continent.

A future-oriented raw materials policy therefore cannot be limited to opening new mines, diversifying suppliers and expanding recycling. It must make raw material demand itself a subject of political decision-making and establish the reduction of primary raw material consumption as a strategic pillar of economic, climate, industrial, trade and development policy.

Demand is not inevitable

Future demand for metals is often presented as a fixed quantity that governments and companies must secure to enable supply security and therefore jobs, competitiveness and prosperity. But demand is shaped by political, economic and societal considerations, objectives as well as political, social and corporate decision-making.

Demand reduction in this sense is not an individual or societal sacrifice or a loss of prosperity. It is a strategic task aimed at meeting societal needs within planetary boundaries. It combines sufficiency, efficiency and circular economy strategies with global justice approaches, innovation, new business models, product designs and changes in physical and mental infrastructure.

Why reducing raw material demand matters

Demand reduction is a matter of global justice.
Lower primary resource consumption in the Global North reduces pressure to expand mining in regions where extraction is associated with environmental destruction, health impacts, land conflicts and violations of Indigenous and local communities' rights. It can also reduce extractive dependencies and strengthen self-determined development.

Demand reduction is environmentally necessary.
Mining and processing metals affect water, soils, air, biodiversity and the climate. Reducing demand lowers energy and land use, emissions and environmental impacts throughout value chains. An ambitious and globally just circular economy is essential, but cannot compensate a continuously rising absolute demand.

Demand reduction is economically foresighted.
A resource-light economy is less vulnerable to volatile prices, supply disruptions and highly concentrated supply chains. It creates incentives for product and process innovation and can strengthen long-term competitiveness and resilience.

Photo: Richard Foulon / Pixabay

Demand reduction is geopolitically smart.
Resource-intensive economies remain vulnerable to trade conflicts, export controls, wars, environmental disasters and the market power of individual states and companies. Lower demand reduces these dependencies and creates room to allocate limited resources to applications with the greatest societal value.

Consequences of EU consumption

The report draws on perspectives from civil society organizations in Indonesia, the Philippines, Peru and South Africa. Their experiences demonstrate that the EU's demand for metals is directly connected to impacts of mining and processing in their countries.

Indonesia currently produces around two thirds of the globally mined nickel. Around 80,000 hectares of forest have been cleared, while another 500,000 hectares are designated for extraction expansion and mining infrastructure. At the same time, much of the energy-intensive processing of nickel relies on coal-fired power plants. Local communities bear severe social and environmental costs, including lost livelihoods and the pollution of water and marine ecosystems, while organizing to defend their territories, livelihoods and right to participate in decision-making.

In the Philippines, mining threatens watersheds, forests, coastal ecosystems, fisheries and agriculture while contributing little to employment and economic development. But what impacts are people willing to accept? Local communities, social movements and environmental organizations have resisted the expansion of mining for years and demand respect for their rights as well as a say in decisions over their territories and their development pathways.

Peru is one of the world's largest copper producers. However, mineral extraction does not automatically translate into socially just development. While much of

the economic value leaves the country, mining communities bear the environmental and social costs. Communities are resisting the destruction of their territories and are already developing and practicing post-extractive alternatives based on their own visions of self-determined development that challenges the prevailing extractive model.

For South Africa, a resource-intensive transition in the EU risks perpetuating colonial patterns of extraction, concentrating economic value and decision-making power away from mining communities while leaving environmental and health impacts behind. Reducing demand, alongside debt relief and non-debt-creating transition finance, would recognize and strengthen affected communities as political actors in shaping their own post-extractive development pathways.

The message across all four cases is clear: a globally just transition cannot be based on continuously expanding extraction to sustain resource-intensive economic models in high-income countries.

From supply security to democratic prioritization

Around 94 percent of metallic raw material consumption in Germany is accounted for by iron and steel, aluminium, copper and nickel. Large shares are used in transport, automotive manufacturing and construction, showing that future demand depends not only on the energy transition, but on how mobility, buildings and products are designed. This creates substantial potential for demand reduction.

A central question is therefore not simply how the EU can secure sufficient raw materials, but which industries should be prioritized when resources are limited. Metals needed for renewable energy, electricity grids, public transport and essential public services compete with resource-intensive consumer goods and mobility patterns.

Under current demand projections, existing and planned copper mines could already fail to meet demand from 2030 onwards. Expanding extraction alone will not resolve this problem. Continuing on the current path risks forcing societies to make allocation decisions under conditions of scarcity, rising prices and geopolitical conflict.

The alternative is a Transformation by Design: reducing primary demand in advance through sufficiency, efficiency and circularity, while democratically deciding on how limited resources should be prioritized.

Guidelines for a Raw Materials Transition

An EU raw materials transition should:

1. **Set binding targets for reducing primary raw material consumption**, including material- and sector-specific targets, interim milestones, monitoring and globally just consumption limits.

2. **Democratically prioritize raw material use**. Raw material consumption is shaped by political and economic decisions. The priority of different uses of raw materials must be decided through transparent, democratic and globally just processes. These decisions must respect existing agreements on human rights and Indigenous Peoples' rights and ensure the meaningful participation of resource-rich countries, affected communities and other relevant stakeholders.

3. **Reduce material demand in mobility and construction** by reducing and shifting traffic, expanding public and non-motorized transport, supporting smaller and lighter vehicles, prioritizing the use and renovation of existing buildings and promoting material-efficient construction.

4. **Make products durable, repairable and circular**, using binding eco-design requirements, digital product passports, long-term software support, interoperability and access to spare parts.

5. **Combine a just circular economy with absolute demand reduction.** Secondary materials, reuse, repair and material sufficiency must be prioritized, while existing community-based and informal circular economy structures, particularly in the Global South, must be protected.

6. **Strengthen the rights of affected communities.** Free, prior and informed consent, including the right to say no, binding environmental and human rights standards, effective liability and remedy mechanisms and democratically determined no-go zones for mining must be guaranteed. Deep-sea mining should be excluded.

7. **Build fair partnerships with resource-rich countries.** European policy must respect the right of resource-rich countries to pursue self-determined development, strengthen local value creation and diversify their economies rather than reducing them to suppliers for European industry. This also requires debt relief, non-debt-creating transition finance and a fairer international financial architecture.

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Conclusion

Europe faces a strategic choice. It can continue trying to meet the ever-growing demand by opening new mines and competing more aggressively for global resources. Or it can reduce its primary raw material requirements and build an economy that is less resource-intensive, more resilient, collectively shaped and globally just.

Each tonne of primary material that does not need to be extracted reduces pressure for new mining activities, strengthens resilience to supply disruptions and creates greater scope for the fair allocation of limited resources.

Raw material demand reduction is not an obstacle to the socio-ecological transformation.

It is one of its preconditions.

Imprint

Note:
This Executive Summary presents excerpts from the main publication "Rohstoffverbrauch senken: Warum Weniger Mehr ist." (Reducing Raw Material Consumption: Why Less Is More), which is available in German. Full references and further information can be found in the full publication and on the PowerShift website.

Main Publication:
Rohstoffverbrauch senken: Warum Weniger Mehr ist.
Internationale Perspektiven auf eine zukunftsfähige Rohstoffpolitik

Further Publications:
Full Publications in: Reduction Series
PowerShift (2024): Reducing metal consumption
AEER (2024): Nickel Industry Background in Indonesia. Risks Involved and Solutions Needed.
ATM (2024): Mining for Energy Transition Minerals in the Philippines
Red Muqui (2025): Proposal for Reducing the Consumption of Critical Minerals
AIDC (2025): Reframing Demand: A South African Perspective on Reducing Primary Metal Consumption in the Global North

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