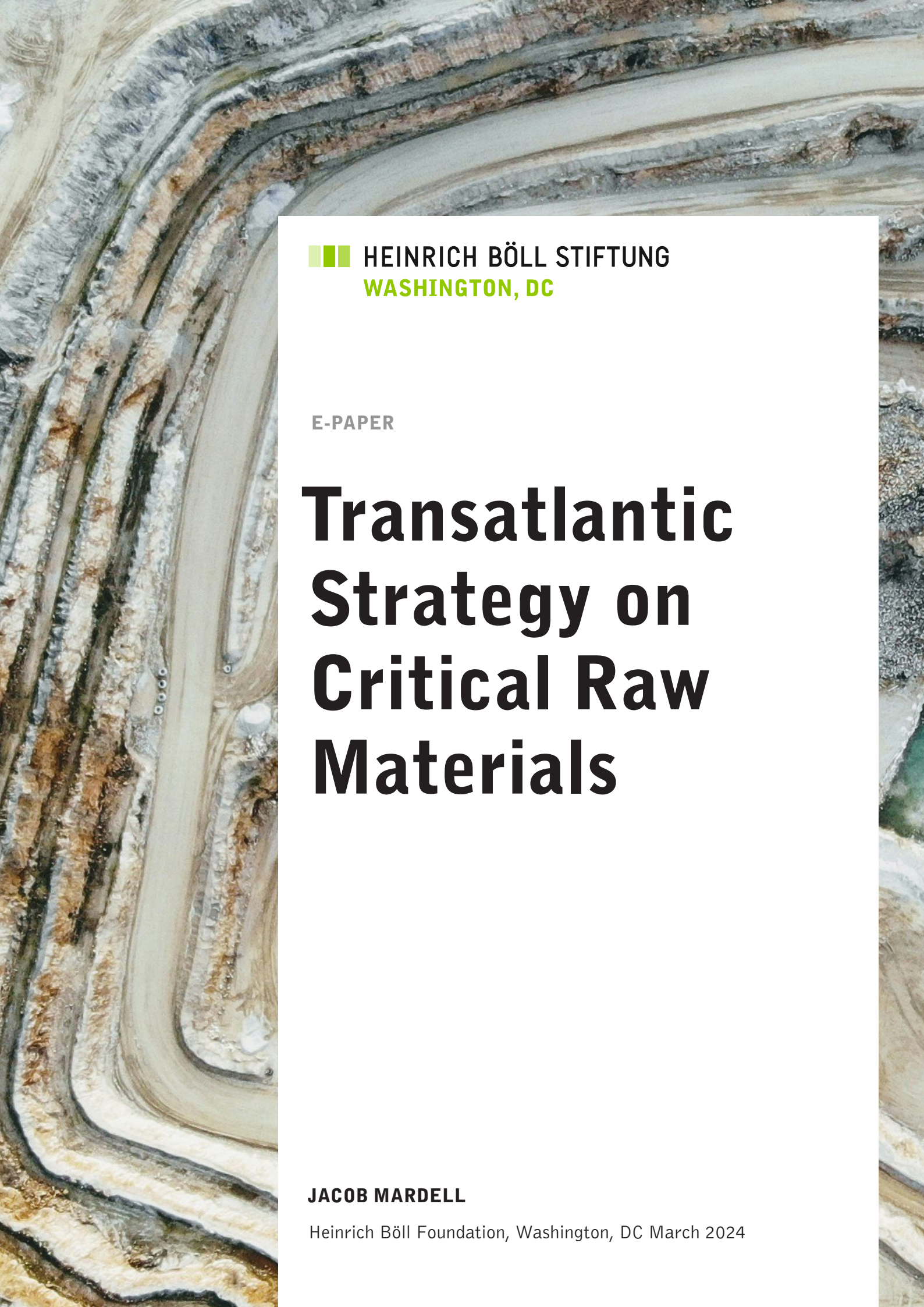

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Transatlantic Strategy on Critical Raw Materials

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Executive Summary

The production of clean energy technologies is reliant on the supply of certain critical minerals (CMs). Responding to perceived challenges in CM supply chains, including strategic dependence on China, governments around the world are making CM supply chain security a strategic priority.

In the US, the most impactful law concerning CMs is the 2022 Inflation Reduction Act (IRA), which besides being the largest piece of climate change legislation in US history, includes tax incentives designed to foster CM supply chains within the US and through friendly countries. On the EU side, the EU's 2023 Critical Raw Materials Act (CRMA) creates targets for domestic CM supply and outlines mechanisms for achieving supply chain security.

Although civil society organizations justifiably claim that the priority should be demand reduction rather than increasing extraction, US and CM policy signals that more mining is on the cards. Many of the risks and opportunities associated with this increase will accrue to developing countries in the Global South. US and EU CM policy prioritizes supply chain security at all costs, suggesting a narrative of supply chain security vs. sustainability. However, sustainability is in fact a prerequisite for security, and the industry wide trend is towards mandatory human rights and environmental due diligence.

Transatlantic CM policy contains a true contradiction between value creation in partner countries and the goal of onshoring green value chains. Despite a rhetorical emphasis on mutually beneficial partnerships, the US and EU's own economic interests are prioritized. This is unsurprising, but in the context of strategic rivalry with China, the EU and US should concentrate on providing a genuinely competitive offer to partner countries.

Securing the Supply of Critical Minerals is High on the Policy Agenda

Clean energy technologies are not beholden to a steady stream of fossil fuels, but their production is materially intensive and requires certain critical mineral (CM) inputs. The global transition towards clean energy systems is thus dependent on the supply of CMs

Dependence on CMs is a concern for governments because mining these minerals is highly time and capital intensive, while price volatility and risks, including regulatory and environmental factors, make it a challenging sector for private investment.

What are Critical Minerals?

Criticality can be broadly understood as a combined assessment of economic importance and supply risk. Definitions of criticality and lists of CMs vary between jurisdiction and over time: in 2011, the EU included 14 individual materials in its "list of Critical Raw Materials," whereas in 2023 it specified 34 materials, including two new "strategic raw materials" that do not meet criticality thresholds, but which are deemed strategically important. Rather than refer to any specific policy context, this briefing uses the term critical minerals in the broad sense of clean energy materials that are deemed critical or strategic by either the EU or US. "Critical minerals" – used more often in the US – is preferred over "critical raw materials," the largely interchangeable term used in an EU policy context.

The extraction and processing of many CMs is also geographically concentrated, leaving supply chains vulnerable to geopolitical shocks. According to the latest EU assessment (2023), 63% of global cobalt supply is mined in the Democratic Republic of Congo, while 60% of cobalt is refined in China. For nine individual CMs – all heavy rare earth elements – China accounts for 100% of global supply.

Dependence on China for rare earth elements was already a concern in the 2000s, but more recent developments have pushed CMs further up the policy agenda. Beyond a generally heightened sense of geopolitical competition, shutdowns during the COVID-19 pandemic and Russia's invasion of Ukraine have underlined the importance of supply chains and the problem with strategic dependencies.

Global demand for many CMs has sharply risen over recent years. For example, lithium – the rockstar of battery metals – has seen demand increase 300% from 2017 to 2022. The increasing centrality of clean energy technologies means that net-zero industry is a

focus of policymakers' concern about CM supply. However, digitalisation, as well as traditional sectors like construction and defense are just as significant contributors to demand for CMs.

The world has entered a new energy paradigm in which the availability of CMs is as valid a national security concern as oil and gas supply. Still, policymakers should be wary of using the existential threat of climate change to steamroll concerns about extracting and processing more CMs. Over emphasizing clean energy's role in CM demand omits an opportunity to discuss reducing demand in less strategic sectors like construction.

Additionally, some studies have suggested that many existing assessments of criticality rely on biased information obtained from the mining industry. To complicate the picture of lithium's rockstar surge in popularity, prices for lithium and cobalt have recently crashed on the back of slow demand and oversupply.

But whether or not critical minerals are truly as critical as many think they are, the policy establishment consensus is that the security of CM supply chains is a top strategic priority. China, for example, is currently doubling down on cobalt investments in the Democratic Republic of Congo, even despite the cobalt price crash. Wisely or not, governments around the world have expended significant effort to introduce legislation aimed at securing CM supply chains.

China is central to both supply chain security and sustainability

Control over the technologies that are defining our current and future energy systems is an important dimension of strategic rivalry between China and the West. China is the world's largest market for many of the minerals required to build an electric car, but it is also dominant on the supply side.

Many of the world's rare-earth elements (REEs) are mined in China. Despite the name, most rare-earth minerals are abundant and widespread, but they are costly to extract and process. China came to dominate REE supply chains in the 1980s and 90s, and as of 2022 accounted for up to 70% of global production. Although some studies dispute the extent to which Beijing can leverage its position, China's REE position features large in the minds of policymakers as an example of dangerous strategic dependency.

From the early 2000s, China's "Going Out" strategy encouraged Chinese enterprises to secure overseas mineral assets. Mining investments have also featured prominently under China's Belt and Road Initiative (BRI) – an infrastructure-branding exercise that has deepened China's global footprint across a number of sectors. As of 2018, China controlled only around 3% of total global mineral production, but it plays a significant role in certain strategic niches, dominating cobalt mining in the DRC and nickel processing in Indonesia.

China's formidable domestic refining capacity – 68% of global cobalt and 72% of global lithium refining capacity in 2022 – also lends it a commanding role, meaning that diversification at processing as well as extracting stages is a priority.

China's prominence means that any discussion about the sustainability of CM supply chains must factor in China. Opacity in supply chains is exacerbated by the prominence of transparency-averse Chinese refiners, meaning that reducing dependency on China is an opportunity to forge more sustainable CM supply chains. However, the extent to which the West can diversify away from Chinese suppliers is questionable, prompting the argument that cooperation with China on sustainability is vital.

In the US, the most impactful law concerning CMs is the Inflation Reduction Act (IRA). Approved by the Senate in August 2022, it is the largest piece of climate-focused legislation in US history and includes significant tax incentives designed to foster CM supply chains within the US and through friendly countries.

On the other side of the Atlantic, the most significant piece of recent CM legislation is the EU's 2023 Critical Raw Materials Act (CRMA), which contains EU-wide targets for domestic CM supply and several mechanisms for achieving supply chain security.

The IRA is a much wider piece of legislation that will distribute approximately $370 billion over ten years to accelerate the transition to net-zero within the US. The EU's response to the IRA's heavy handed promotion of domestic net-zero industry is the Net-Zero Industry Act, which together with the CRMA and another file form the EU's Green Deal Industrial Plan.

Both the IRA and CRMA deliver the same message on the need for greater CM autonomy, stressing sustainability and a role for international partnerships. They differ most significantly in the tools made available. The CRMA sets out ambitious targets and provides a detailed framework for securing Europe's CM supply, but it is missing the IRA's concrete, financial incentives for moving CM supply chains to the US (onshoring) or through friendly countries (friendshoring).

The Impact of Critical Mineral Policy in the Global South

The Global South shoulders much of the burden for growing demand

Some civil society organizations (CSOs) oppose more mining full stop and argue that instead of prioritizing extraction, the CRMA should address the fundamental problem of unsustainable consumption and growth. The fact that the EU consumes a quarter of CMs, yet accounts for 6% of the world population and 3% of production suggests that there is validity to this claim. It is also noteworthy that non-strategic sectors like construction also contribute significantly to CM demand. However, demand reduction is a politically difficult sell.

Other CSOs have formulated softer messages of demand reduction – e.g. smaller EVs rather than no EVs – and emphasized circularity. After the release of the CRMA in March, CSOs lobbied for a greater emphasis on circularity over extraction – Recycling targets were raised from 15 to 25% in the updated version of the CRMA, but some critics feel that recycling projects are still not prioritized enough.

Whether or not the US and EU should focus more on demand reduction, current CM policy signals an increase of supply. Perceived demand cannot be met by recycling nor local production, meaning that "strategic partnerships" are key to the CRMA, while the "formation of diverse and reliable foreign supply chains" is the third pillar of the DOE's CM strategy.

Although Australia and Canada play a significant role in global CM production, a large part of the risks and opportunities associated with increasing extraction and processing of CMs will fall on developing countries, many of which are in the Global South.

Global South

Like all terms used to group such a diverse swathe of countries "Global South" has its problems. Its use here is not meant to imply that countries of the Global South share much in common or act as a unified bloc. Chinese foreign policy rhetoric uses the term for developing countries in Africa, Latin America, and the Asia Pacific that Beijing has identified as "swing states" in its contest with the West. The term is criticized for perpetuating colonial dynamics, but it is used here precisely because it captures that potentially extractive relationship between rich countries, many of which were once colonial powers, and poorer countries, many of which were once colonies.

The opportunity exists for resource-rich countries to leverage competing demand and geo-political competition in order to capture economic value and advance their own interests, breaking patterns of extractivism that have existed in the past. Of course, history demonstrates that resource endowments are not always beneficial for host countries, and the prioritization of CM supply among resource-hungry countries risks making all the same mistakes of the fossil-fuel age.

The clearest risk for resource-rich countries in the Global South is that hunger for CMs in the Global North increases all of the negative environmental and human impacts of mining by prioritizing supply at all costs.

The CRMA itself acknowledges that "increased demand for critical raw materials could lead to negative environmental and social impacts." This is especially true for strategic projects implemented outside of the EU, and doubly so for countries in the Global South plagued by poor governance.

Mining and processing critical raw materials is a dirty business

Impacts vary between supply chains, but the mining and processing of CMs is generally fraught with environmental, social, and governance risks:

- Waste material, or mine tailings, can leak and cause environmental harm and even loss of life, as occurred most dramatically during the 2019 Brumadhino disaster in Brazil, when a tailings dam collapsed, killing 270 people.
- Mining CMs also heavily utilizes water, contributes to air pollution and can have catastrophic impacts on biodiversity through habitat destruction.
- Processing CMs is no less problematic, involving the use of sometimes very toxic chemicals, and with similar issues around water depletion, waste, and pollution.
- Mining is also notorious for human rights violations – since 2015, the mining sector has accounted for 30% of the total number of attacks on human rights activists.
- This rate is 41% for cases involving indigenous communities, whose rights are at extreme risk from the global CM rush – 85% of current and planned lithium projects worldwide are located on or near land connected to indigenous communities.
- Finally, child and forced labor are prevalent in CM supply chains, while mining is also associated with increased crime, corruption, and gender based violence.

All of these issues are especially concerning in resource-rich governance-poor countries such as Zimbabwe and the DRC that have lax or lightly implemented regulation, and a history of corruption and human rights violations.

These issues, and many mining companies' poor handling of them, has led to the mining sector garnering an unsavory reputation. Transatlantic CM policies are cognizant of this

fact and the CRMA contains provisions on how to "foster public acceptance" of strategic projects – a wording that civil society organizations point out has "worrying echoes of coercion."

Security vs sustainability is a false dichotomy

The CRMA's language on "overriding public interest" is a major concern for civil society organizations (CSOs), as it essentially allows strategic projects to sidestep environmental safeguards if projects are deemed in the "public interest."

The provision also reveals that, ultimately, the CM policies above represent a prioritization of CM availability over all other concerns. This sets up "supply chain security" and "supply chain sustainability" as conflicting goals. However, this dichotomy falsely positions sustainability as a "nice to have" that comes at the expense of security. In reality, sustainability is a necessary component of resilient, secure supply chains.

The "security-sustainability" contradiction is often asserted in the debate around CM supply chain security. For example, the director of the International Energy Agency,states in evidence submitted to the UK Parliament, that "adopting stringent standards in the areas of ESG or traceability may reduce the availability of critical minerals." The Federation of German Industries also criticizes EU due diligence requirements, claiming that they create "unquantifiable legal risks for companies" that would make it "more difficult to diversify supply chains."

But sustainability is a crucial part of CM supply chain security, rather than its antithesis. This recognition echoes a progressive understanding of general security that encompasses climate change and socio-economic impacts as well as military and coercive threats.

The security of CM supply chains has come under legislative scrutiny in parallel with growing pressure for companies to comply with due diligence obligations. The key piece of relevant legislation here is the EU's Corporate Sustainability Due Diligence Directive (CSDDD), which the Council and European Parliament reached a compromise on in December 2023.

But the pressure being exerted on mining companies is not solely a top-down government initiative. It is part of a wider trend towards mandatory human rights and environmental due diligence that derives from the UN Guiding Principles for Business and Human Rights, and which is driven by consumer and investor concern. These concerns are practical, rather than ideological – they recognise that sustainability is a prerequisite of security.

Human rights and environmental impacts inevitably draw scrutiny from downstream industries, consumers, investors, and civil society. This deters investment, causes reputational damage, and ultimately risks supply. Eroding local support for mining projects also has tangible commercial consequences, and there have been numerous incidents in recent years that have slowed or even stopped mineral developments in their tracks. For these reasons,

resource-rich countries in the Global South are broadly on board with the ESG agenda – sustainability is thus a necessary part of any competitive offer.

Besides the problematic wording on "overriding public interest," the language of US and especially EU CM policy appears to broadly recognize that sustainability is a prerequisite to supply chain security. However, security vs. sustainability narratives are widespread, and policymakers should remain vigilant against drawing this false dichotomy. Wording on sustainability should be included in policy for the sake of national security interests rather than placating CSOs.

CSOs have also criticized the CRMA for lacking stronger due diligence terminology, for not including minimum requirements for strategic projects, and for leaning on ineffective industry certification schemes. The mandatory reporting requirements of the CSDDD are therefore a welcome addition to some of the looser provisions in the CRMA.

Opacity in supply chains and limited capacity to implement ESG standards remain the two greatest barriers to more sustainable CM supply chains in the Global South. The US and EU should prioritize working towards transparency in CM supply chains.

There are already a multitude of ESG standards – rather than proliferate more, policymakers should focus on existing guidelines such as the United Nations Guiding Principles on Business and Human Rights, relevant International Labour Organisation conventions, and OECD Guidelines for Multinational Enterprises on Responsible Business Conduct. In many partner countries, strong ESG regulations exist, but investment is needed in capacity building to help implement them.

One potential conflict between sustainability and security that remains is in the case of engagement with regimes that have especially poor records on governance and human rights. The West is perceived by some to engage in patronizing interference in the Global South, projecting values and judging that certain regimes do not legitimately represent the interests of their people. This puts China, with its characteristically amoral approach, at an advantage in the contest for CM supply.

The dilemma of whether the EU should compromise its values in order to secure CMs epitomizes the broader challenge the EU faces in maintaining a values-driven foreign policy in a world where the West is less clearly dominant. Ultimately, this is an existential question beyond the scope of this briefing. Nevertheless, it is vital for both the EU and US to articulate priorities unambiguously, being mindful that rhetorical commitment to values without action risks accusations of hypocrisy.

In practice, the West has long been ready to compromise values for strategic interests, and it is precisely these instances of perceived hypocrisy that have most significantly tarnished the West's reputation.

Is the Value-Added Partnership More than A Rhetorical Shift?

Beyond concerns over environmental and human impact, there remains the issue of what kind of economic impact the CM policies outlined above will have on the Global South.

In theory, the growing demand for CMs puts resource-rich developing countries in a position to choose their partners. Rivalry between China and the West provides added opportunity for resource-rich countries to leverage geopolitical tensions to their advantage. For example, the EU and US have been spurred on by China's Belt and Road Initiative to offer competing infrastructure alternatives. In the best case scenario, competition for CM supplies prompts a race to the top in terms of competing positive offers.

Several countries in the Global South appear to have recognised this opportunity, and are taking steps to retain more of the value of CM supply chains, principally through export bans on raw materials.

Indonesia pioneered this approach with its "downstreaming" policies aimed at capturing value within the country further down the CM value chain. When nickel exports reached an all time high in 2013 – with 90% going to China – Indonesia imposed an export ban on nickel ore the following year, which it relaxed and then tightened in 2017 and 2020. The effects of the policy are mixed in terms of social and environmental impact, as well as in its secondary effects for Indonesian companies, but foreign investment in nickel processing has skyrocketed to $15 billion, fuelling impressive economic growth rates.

Tanzania, Ghana, Malaysia, Zimbabwe, and Namibia have followed Indonesia's example, introducing export bans of their own. Nationalization is another tool being deployed in an attempt to retain value: Mexico approved a law nationalizing its lithium industry in 2022, and Chile's left-leaning President is also exploring nationalization of lithium reserves. Additionally, Argentina, Bolivia, and Chile – assessed to collectively hold half of the world's lithium reserves – are discussing the establishment of a cartel so as to exert more control over pricing.

Resource nationalism has been viewed with concern in the resource-hungry countries of the Global North, with the EU filing a lawsuit against Indonesia' export ban with the World Trade Organization (WTO) in 2019. At the same time, the EU has shifted its rhetoric on partnerships with resource-rich countries.

The "strategic partnerships" vaunted in the CRMA are described by the EU as promoting the economic development of producer countries "in a sustainable manner through value chain creation." Throughout the CRMA and across official statements, the EU emphasizes the "win-win" nature of these partnerships.

This shift is partly a tactical response to rising resource nationalism and the growing need to secure CRMs. It also represents a recognition that Europe's approach in the Global South is perceived as exploitative. By engaging at "eye-level" and through "partnerships

of equals," the EU is attempting to win over countries in the Global South amid heightened geopolitical rivalry.

However, there is a tension here between claims to add greater value in partner countries, and the main goal of transatlantic CM policy, which it to promote onshore green value chains. Much more than the largely false sustainability-security dichotomy explored above, this is a zero-sum challenge: value retained within partner country supply chains cannot be onshored.

Although the US and EU talk the talk on mutually beneficial partnerships, their policies also seek to protect against resource nationalism, for example by seeking to strengthen WTO rules. The US' Minerals Security Partnership (MSP), established in June 2022 and including the European Commission amongst 13 other partners, has also been criticized for strengthening the buying power of resource-hungry countries, while diminishing the agency of resource-rich countries.

Alongside the CRMA, the EU proposed a "Critical Raw Materials Club," which would involve participation by both resource-hungry and resource-rich countries, but details on how the initiative would work are scarce. It was scheduled to be launched at COP28 in November 2023, but its status is unclear as of drafting.

Minerals Security Partnership

The Minerals Security Partnership (MSP) was established in June 2022 as a collaborative effort among 14 partners, including the European Commission to strengthen critical minerals supply chains. As of August 2023, the members include the United States, Australia, Canada, Finland, France, Germany, Italy, Japan, Norway, India, the Republic of Korea, Sweden, the United Kingdom, and the European Commission. In its Principles for Responsible Mineral Supply Chains, the MSP recognises the importance of strong ESG credentials, transparency, and stakeholder engagement, but it's unclear to what extent these principles are used for investment decisions. It essentially allows resource-hungry countries to identify projects and coordinate public-private support, leveraging the market-size of its members to negotiate prices. As such, it does not allow much room for resource-rich countries to co-design deals and the implementation of projects.

At an October 2023 meeting in London, the MSP confirmed they are working to advance at least 17 high potential projects – 11 in upstream mining, 4 in midstream processing, and 2 in recycling in recovery; 5 in the Americas, 7 in Africa; 3 in Europe; and 2 in the Asia-Pacific. In November, the US Department of State launched the Minerals Investment Network for Vital Energy Security and Transition (MINVEST), a public-private partnership that seeks to support the MSP by bringing the private sector to the table.

Although US and EU policies promise mutually beneficial partnerships, they do not contain any precise definitions of what this means in practice and how it will be ensured. The rhetoric and approach are promising, but they must be followed up by concrete projects

– by infrastructure investments, downstream engagement from Western companies, and transfer of know-how.

Additionally, the economic value of further downstream activities such as battery manufacture dwarfs the value-add from mineral processing, so downstream investment should be prioritized. It should also be noted that EU and US CM policies for the Global South lean heavily on engagement from the private sector. The EU is seeking buy-in from European companies with minimal financial incentives, so it remains to be seen whether the private sector will commit to value-creation in the sometimes risky investment climates of partner countries.

Ultimately, trade and economic deals are a negotiation between sometimes competing national interests. However, the EU and US should be prepared to compromise in this case. The driving motive behind much of their CM policy is diversification away from China – something local value creation achieves. It is also firmly in the strategic interests of the EU and US to provide a genuinely competitive offer if they want to outpace China in securing CMs overseas. The best case scenario is that policymakers recognise the strategic need for sustainable, value-creating partnerships, prompting a race to the top that compensates for some of the risks of increased extraction.

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