

An Effective and Efficient Critical Raw Materials Centre

Submission for EC DG GROW Public Consultation on the Critical Raw Materials Centre

Geneva Platform for Resilient Value Chains

29th of July 2026

Authors

Dr. Tom Moerenhout (Belgian citizen, tom.moerenhout@genevaplatform.org)

Maximilian Kessler (German citizen, maximilian.kessler@graduateinstitute.ch)

Summary

This input paper sets out recommendations for the EU's proposed Critical Raw Materials Centre (CRMC), structured around five core pillars plus two cross-cutting themes. Each pillar follows the same format: a diagnosis of the EU's current gap, a review of functioning models abroad (mainly Japan's JOGMEC/METI/trading-house ecosystem, plus US and Korean examples), and concrete CRMC design recommendations.

The five pillars are:

1. Industry intelligence, proposing a dedicated intelligence hub with enforceable, reciprocity-based data-sharing
2. Early-risk investment, calling for a JOGMEC-style fund covering exploration and feasibility stages as well as low TRL refining and recycling methods that the EU currently lacks
3. Financing coordination, urging a single-entry-point financing hub backed by at least €10 billion
4. Stockpiling, recommending a tiered, risk-scaled reserve system (up to 180 days for critical materials) with business-as-usual lending, drawing lessons from Korea's dual-objective model and the US's Project Vault
5. International co-investment and offtake, proposing that CRMC co-investment always be paired with offtake agreements and strong diplomatic coordination.

The two cross-cutting themes address:

1. Member State engagement, integrating national data and co-investment
2. Dependency on processing equipment and specialty chemicals, not just raw materials themselves.

Pillar 1: Industry intelligence and market information

Diagnosis: The EU lacks an effective and trusted industry-information system

- A central weakness of current EU raw materials policy is a lack of usable market intelligence that underpins financial and institutional decisions. The EU has improved its understanding of aggregate demand, import dependence and strategic raw materials, but it still lacks a structured system to collect forward-looking, firm-level information about demand, project pipelines, processing bottlenecks and likely offtake needs across value chains. As a result, Europe is trying to design stockpiling, investment and offtake support with only a partial picture of future industrial demand and supply risk.
- This matters because supply security problems are rarely visible at the level of raw materials lists alone. In many sectors, additional bottlenecks come as specific processed materials, intermediate products, or a single upstream node several tiers removed from the final manufacturer.
- Much of the relevant information is held by firms, customs authorities, sectoral platforms, Member States and public bodies. The problem is that there is no trusted institutional mechanism to collect, aggregate and use that information in a way that is confidential, competition-compliant and operationally useful.

Functioning models: Japan's trading houses (Sogo Shosha) model

- Japan's model is based on a close institutional link between state actors and industry. METI, JOGMEC and Japanese trading houses have built a long-standing ecosystem in which commercial information, strategic priorities and public intervention are much more closely connected than in Europe.
- This system gives Japanese authorities and public institutions a far clearer view of:
  - expected demand growth by sector and technology
  - likely future offtake needs
  - project performance and financing gaps
  - emerging supply risks in upstream and midstream segments
  - the commercial viability of overseas investment opportunities
- The role of trading houses is especially important. They operate across the value chain, maintain close relationships with both suppliers and industrial buyers, and therefore generate information that is directly relevant for public policy.
- The United States is also moving in this direction, with increasing emphasis on firm-level supply-chain mapping, early-warning systems and strategic coordination with allies.

Recommendations for CRMC

- CRMC Statutes should make clear that market intelligence is now a core economic security capability based on reciprocity, not a secondary analytical task. The Critical Raw Materials Centre should be designed in a way that compensates for that

structural gap arising from the absence of a METI–JOGMEC–trading-house ecosystem.

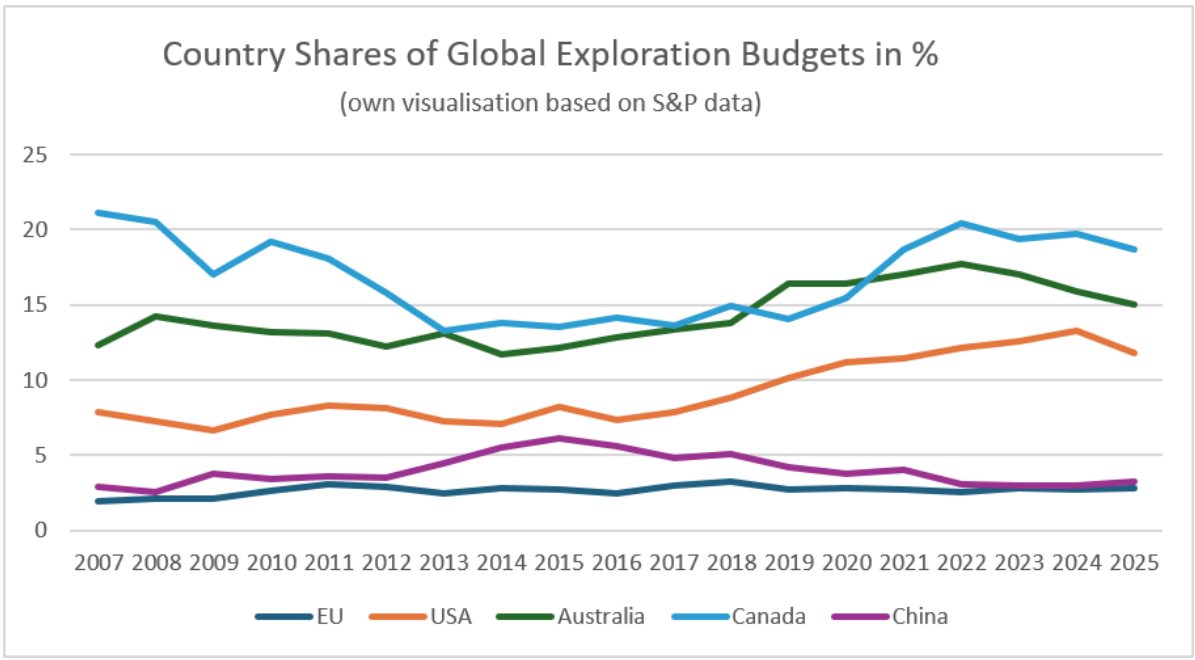
- CRMC should operate this dedicated Intelligence Hub as its central platform for confidential, forward-looking raw materials information, building on existing EU monitoring and economic security initiatives but integrating them into one operational system.
- The Intelligence Hub should have a clear, enforceable mandate:
  - Collect forward-looking information from industry on demand, bottlenecks, project pipelines and likely offtake needs;
  - Identify supply-chain vulnerabilities at firm and product level, including single points of failure and strategic dependencies;
  - Translate this intelligence directly into decisions on investment support, demand aggregation and stockpiling.
- The Intelligence Hub should create a structured, confidential industry interface involving:
  - Large industrial users as well as SMEs;
  - Processors, refiners and recyclers;
  - Specialised traders, distributors and mid-stream actors;
  - Relevant financial and technical experts.
- Data sharing with the CRMC should be enforceable and linked to access to support. This reciprocity principle should be made explicit in the CRMC's governing rules, so that a firm’s level of preferential treatment tracks can be reassessed continuously. Any company seeking investment support, participation in demand aggregation or access to CRMC-managed stockpiles should be required to provide structured, up-to-date information on its supply chains, demand outlook and project pipelines under clear confidentiality and competition-law safeguards.
- Firms that do not participate, or that share only minimal or stale information, should not be automatically excluded, but should be systematically deprioritized relative to active participants across all CRMC instruments to create a gradual incentive similar to how the Japanese system actually sustains cooperation over time.
- To increase the informational value the Intelligence Hub should explicitly be connected to:
  - Customs and trade data;
  - Existing EU and national raw materials observatories, such as RMIS;
  - Sector-specific platforms and research projects.
- The Intelligence Hub should regularly produce for EU institutions and Member States:
  - Medium- and long-term demand scenarios for selected strategic raw materials and intermediates;
  - Maps of critical supply-chain choke points and strategic dependencies;

  - Assessments of where demand aggregation or public offtake support is viable, in coordination with the Raw Materials Mechanism;
  - Early-warning indicators to guide contingency planning and use of contingency stocks.
- The CRMC should ensure that the proposed intelligence hub is staffed with sufficient in-house sectoral and technical experts (geologists, metallurgists, process engineers, sector economists) to interpret firm-level submissions rather than relying solely on external consultants.

Pillar 2: Early-risk investment

Diagnosis: Not one single institution in the EU covers early-risk, and early-TRL investment

- Currently, the focus of the EU and its member states is concentrated on project finance for late-stage, near-bankable assets, with limited tools and budgets for early-stage exploration, feasibility work, pilot plants and processing innovation. This is made worse with the current CRMC debate leaning toward a JBIC-style investment layer to support projects once they are nearly bankable in exchange for offtake, which leaves a structural gap at the earliest, highest-risk stages of the pipeline.
- Support is scarce and fragmented across multiple programmes (Horizon, Innovation Fund, EIC, EIB/EBRD facility via EBRD's JUMP, national funds) with no single institution responsible for a coherent investment portfolio along the full value chain, specifically exploration and feasibility study stages.
- Without support of mining projects at the exploration and feasibility stage, many strategic European and partner-country projects never reach the point where late-stage EU instruments can even apply. This matters especially since many near-market mining projects are now off the market due to geoeconomically motivated investments by other actors. The graph below shows how the EU punches below its economic weight when it comes to global exploration budgets.
- Similarly, there are very limited funding programmes (such as the EIC Accelerator) for refining and recycling projects with low technological readiness levels (TRL). If the EU only funds established refining and recycling technologies there is a tangible risk that EU producers will almost always be positioned at the higher end of the international cost curve in the medium-term due to the scale and lower cost structures found in other countries.



Note 1: The nonferrous exploration budgets covered by S&P Global Market Intelligence include spending for gold, base metals, platinum group metals, diamonds, U3O8, silver, rare earths, potash/phosphate, and many other hard-rock metals, but specifically exclude exploration budgets for iron ore, coal, aluminum, oil and gas, and many industrial minerals.

Note 2: Estimates for Chinese exploration budgets vary significantly according to source. This is because S&P reports non-ferrous corporate exploration budgets, while other data (see here) capture broader state geological exploration across more commodities and institutions.

Functioning models: The real JOGMEC model supporting early-risk investment and exploration

- JOGMEC provides risk-tolerant funding across the entire project lifecycle, including exploration, resource delineation, feasibility, mine development and, in some cases, downstream processing.
- Its instruments include grants, grants convertible to equity, direct equity stakes, guarantees and technical support, deployed at the portfolio level: JOGMEC accepts a higher failure rate at individual project level in exchange for security-of-supply returns across the portfolio as a whole. This includes early-stage project finances.
- JBIC and the trading houses typically step in later, once feasibility is established, providing project finance and guarantees in exchange for offtake. JOGMEC is what gets projects to that bankable stage in the first place; this is the layer the current EU debate is completely missing and in which a portfolio approach is necessary.
- US public-private funds and guarantee schemes are expanding support for processing, recycling and mid-stream capacity, but the exploration-stage funding gap remains largely unaddressed there too, which reinforces how distinctive and effective the Japanese exploration-and-feasibility layer is.

Recommendations for CRMC

- The CRMC should build in an investment pillar and a special purpose fund to give the CRMC a toolbox including equity, quasi-equity, grants, guarantees, contracts for difference, and the ability to acquire priority purchase rights. These tools should extend beyond late-stage, near-bankable projects to earlier risk stages.
- The CRMC should use such a legal toolbox to build a JOGMEC-style early-risk layer covering the full project lifecycle. This JOGMEC layer should work through a fund that is sufficiently financed so it can accept a higher failure rate at project level in exchange for security-of-supply returns at portfolio level. The goal should be to:
  - Fund exploration and geological survey work in the EU and with trusted partners internationally and publish pre-competitive data;
  - Fund pre-feasibility and definitive feasibility studies (PFS/DFS), metallurgical test work and pilot plants, especially where processing or recycling bottlenecks exist;
  - Take equity or option positions in early-stage projects carrying high geological or technology risk but have clear strategic value;
  - Tie early-stage support to conditional future offtake rights for European buyers: firms receiving CRMC exploration or feasibility funding should commit that, if the project reaches production, a defined share of output is allocated to a right-of-first-refusal system linked to CRMC-coordinated demand aggregation.
- Any fund structure within the CRMC should have the mandate to invest in specialised funds as well as individual projects.
- Require CRMC-backed projects, from exploration onward, to accept rigorous information-sharing obligations so that live pipeline data can also be included in the Intelligence hub.
- For refining and recycling, the CRMC should actively fund early-TRL, ideally ex-China, methods which have the potential to cut through dependencies and position the EU as an innovative actor in mineral value chains.

Pillar 3: Coordinating an Ambitious Financing and Investment Hub

Diagnosis: EU financing is fragmented and under-scaled

- Once a project moves past feasibility into construction and operation, financing support is scattered across InvestEU, the Innovation Fund, the EIB's CRM envelope, and a patchwork of Member State funds.
- These instruments have overlapping mandates, different eligibility criteria and separate application processes, so project sponsors must navigate multiple institutions instead of following one coherent pathway.
- Beyond fragmentation, the EU's headline financing commitment (EUR 3 billion mobilized within 12 months under RESourceEU) is small next to what competitors are already committing on comparable timeframes. This complete lack of financial

ambition effectively undermines the credibility of European offers in competitive third-country projects.

Functional models: Japan and US lessons

- Japan's system works not because JOGMEC alone finances everything, but because JOGMEC, JBIC, commercial banks and the trading houses coordinate financing for the same project in sequence, each stepping in at the stage suited to their risk appetite. JOGMEC's minerals-specific financial assistance package alone tops several billion euros, and is even complemented by dedicated top-ups (for example EUR 240 million in January 2026 alone for rare earths) when circumstances demand it.
- The US shows the same pattern of scale and coordination: over USD 10 billion in new critical-minerals deals and export-finance commitments in roughly a year, followed by a further USD 12 billion strategic reserve months later.
- In both cases, early public backing functions as a signal that pulls in later-stage financiers and private capital, rather than the public institution trying to finance everything itself.

Recommendations for CRMC

- The CRMC needs an explicit, executive coordination mandate over the whole of the EU's CRM financing ecosystem. It needs to become the first and single point of contact where a project sponsor is matched to the right combination of EU, national, EIB/EBRD and private instruments for construction and operation financing. For that, fund managers of EU programmes could be seconded to CRMC or CMRC could have a mandate to allocate a given budget of funds from existing EU programmes under guidelines that follow each programme's logic but are tailored to mineral value chains. This prevents sponsors applying separately to each instrument.
- The Union needs to set an explicit budgetary ambition for the CRMC of at least EUR 10 billion over the next multiannual financial framework period, covering early-risk investment, financing coordination and stockpiling together as one resourced institution, ending the current fragmentation of separate mechanisms competing for funding. This should be complemented by top-up contingency funds whenever needed.
- Make the financing hub responsible for tracking disbursement timelines across participating instruments (both national and European) and flagging bottlenecks to the CRM Board, so slow disbursement becomes visible and addressable rather than diffused across institutions with no single owner.
- Integrate the Raw Materials Mechanism in the CRMC to realise the CRMC's potential as a one-stop shop.

Pillar 4: Stockpiling and emergency preparedness

Diagnosis: EU stockpiling is limited and poorly targeted

- Limited EU-level contingency stocks exist today, and the stockpiling debate often drifts toward broad, expensive schemes covering many metals. This risks cost escalation and market distortion without a proportional security gain.
- Industry and Member State input consistently warns against a one-size-fits-all approach and stresses that stockpiles should function as crisis instruments of last resort, not permanent market-management tools.
- Current EU thinking treats stockpiles almost exclusively as emergency reserves, with no mechanism for industry to draw on stocks for ordinary, temporary shortages the way several Asian peers do.

Functional models: Lessons from Japan, US, and Korea

- JOGMEC and METI manage targeted stockpiles of a narrow set of strategic materials, with clear crisis triggers, governance rules and close links to investment and offtake policy. Stockpiles are scaled with risk, reaching up to 180 days of consumption for the highest-risk materials. This 180 days should be the objective for the EU.
- Korea runs a dual-objective system. Stocks stabilize prices and support domestic manufacturing in business-as-usual conditions, not only in a crisis. Material is lent to companies facing temporary shortages and returned once the shortage passes. Korea classifies materials in tiers (33 core minerals, 10 of them "strategic core"), splits management across two specialized agencies, and has raised its depth target from 54 to a planned 100 days by 2031, with top-risk materials held over 180 days and release timelines cut from 60 to 8 days in case of emergencies.
- The US offers a live, cautionary example with Project Vault. The budgetary allocation is ambitious, with a $10 billion EXIM loan plus $2 billion in private capital designed to be expended in one year. Like JOGMEC, they use commodity trading houses (Hartree Partners, Traxys, Mercuria) for sourcing and logistics. At the same time, Vault is trying to serve three objectives at once (emergency stockpiling, market-making in China-dominated markets, and demand aggregation for project bankability) that pull in different directions because emergency speed favors sourcing wherever supply exists (including China), market-making favors concentrating outside China, and demand aggregation favors standardized specs that many OEMs don't actually want. Without published sourcing rules or governance criteria, Vault's reliance on trading firms creates a real conflict-of-interest risk: those firms profit from the price volatility the reserve is meant to dampen with the biggest risk for liquid markets like copper. Because all 60 USGS-listed critical minerals are eligible, Vault also risks diluting its own budget on deep, liquid, non-China-dominated commodities (a 60-day copper stockpile alone would consume roughly 40 percent of its budget) at the expense of the narrower set of minerals where Chinese market power is actually acute.

Recommendations for CRMC

- The CRMC should focus EU-level stocks on a short, tiered list of weaponizable, high-impact materials, following Korea's core/strategic-core distinction. The CRMA distinction between critical raw materials and strategic raw materials is a good start but a stockpile should explicitly exclude liquid, non-China-dominated commodities to prevent them from consuming a disproportionate share of the CRMC's stockpiling budget. For example, while copper is a strategic raw material, deeply liquid hedging markets exist unlike for graphite or magnet REEs.
- Publish sourcing rules, governance criteria and release triggers before the stockpiling mechanism goes live, not months afterward, so that any use of external trading partners cannot be read as opaque or self-serving.
- If the CRMC uses commodity trading houses or intermediaries for sourcing and logistics (as Japan does with Sojitz), require firewalling and disclosure of those firms' proprietary trading positions, with the strictest scrutiny reserved for liquid, broadly traded materials where arbitrage risk is highest.
- Add a business-as-usual lending mechanism modeled on Korea's system: firms facing temporary, non-crisis shortages could draw stock from the CRMC and return it shortly after, instead of stocks being reserved for emergency release only. For that, minimal stockpile thresholds up to which business-as-usual lending mechanisms can be used should not be defined for each mineral.
- Build in an SME-priority rule for any lending or release mechanism, so smaller downstream manufacturers that are often the most exposed and least able to pay commitment fees are not crowded out by larger incumbents.
- Decide explicitly, mineral by mineral, whether the CRMC stockpiles raw or refined material, and tie that choice to the build-out of actual European midstream processing capacity, pairing any raw-material stockpile with a financed build of the missing processing capacity.
- Direct CRMC lending and release preference toward projects already backed by the CRMC's own investment and financing-hub pillars, turning the stockpile into a demand anchor for allied and domestic supply the CRMC helped build, rather than a generic buyer of whatever is available.
- Set a rising depth-target path rather than a single fixed number, mirroring Korea's 54-to-100-day trajectory, with an explicit aim of holding 180 days for strategic, weaponizable critical minerals.
- Give the CRMC a durable legal basis so it does not depend on a single, periodically expiring authorization.
- Apply the reciprocity principle throughout: firms and Member States that actively participate in the CRMC's information-sharing and stockpile-reporting requirements should receive priority access to CRMC co-financing, lending and release mechanisms for their own private or national stockholding.

- Support private sector stockpiling through coordinated tax reduction instruments. This should be especially targeted at large OEMs to prevent a crowding out of strategically important SMEs in stockpile releases.

Pillar 5: International co-investment and offtake

Diagnosis: EU overseas investment is fragmented and offers little government backing

- EU companies pursue overseas mining and processing stakes largely on their own, without state-level co-investment, loan support or diplomatic backing comparable to what Japan or the US now offer.
- Offtake agreements are negotiated privately, company by company, giving EU firms weaker leverage against state-backed Chinese buyers and less ability to offer the long-term purchase commitments or price guarantees that make a project bankable.
- Existing EU tools including Global Gateway, Team Europe initiatives, EIB/EBRD external lending, the CRMA's strategic-projects mechanism for third-country projects, and national import loans (such as Germany’s UFK guarantees) are not structured as single co-investment-plus-offtake instruments, so EU support tends to arrive later and smaller than competing offers.
- As a result, EU companies regularly lose out on foreign investment opportunities compared to competitors backed by JOGMEC, US EXIM or Chinese state financing, because those offers combine speed, scale and government risk-sharing that individual EU firms cannot match alone.
- Additionally, many overseas mineral projects are in countries with weaker governance structures which almost require explicit government backing. This becomes more salient as ever more resource-rich countries issue critical mineral policies and are looking for capital-rich, technologically competent partners to cooperate, notably on value addition.

Functional models: Japan and US

- JOGMEC and JBIC can use a variety of instruments to support overseas projects, and they are almost always paired with a long-term offtake agreement that gives Japanese industry preferential access to the output in proportion to the risk they absorb. JBIC relies for about 80% on overseas investment loans, 10% on import loans, but has also seen a growing share of equity investments.
- Japan routes its investments through cooperation with trading houses with established relationships and logistics, e.g. Sojitz's role alongside JOGMEC in the Lynas rare earths partnership is the clearest example.
- Japan's overseas investment is explicitly coordinated with government-to-government diplomacy: resource-diplomacy visits and bilateral critical-minerals agreements including technical capacity building precede and frame the investment decisions, so capital follows a strategic relationship rather than the reverse.

- The US has recently adopted a similar playbook at remarkable speed. Government equity and loan participation (DoD, EXIM) bundled with guaranteed offtake or price-floor mechanisms (as in the MP Materials & Lynas deal) to de-risk projects enough for private capital to follow, alongside bilateral investment agreements with Australia and several Asian partners struck in tandem with broader diplomatic deals.

Recommendations for CRMC

- Give the CRMC a dedicated co-investment mandate to take equity stakes or provide loans into strategic non-EU projects (run through the dedicated critical minerals fund and RESourceEU financing hub but with an explicit international remit).
- Pair every CRMC co-investment with a negotiated offtake agreement for EU industry, sized to the public risk absorbed, so EU companies get preferential access to output rather than competing for it on the open market afterward.
- Use price-floor and guaranteed-purchase mechanisms, financed through the financing hub, to de-risk allied projects and crowd in private capital.
- Require CRMC co-investment decisions to be coordinated with EU external diplomacy (Critical Raw Materials Partnerships and Global Gateway) so that capital follows a government-to-government relationship rather than moving ahead of or disconnected from it. Tailor engagement to the concrete mineral policies and capacities of mineral-rich countries.
- Where sourcing or logistics expertise from trading intermediaries is needed for overseas projects, apply the same governance safeguards set out for stockpiling: published rules and conflict-of-interest firewalls, so risk-sharing with intermediaries cannot be read as opaque.
- Prioritize co-investment toward projects that also feed the CRMC's stockpiling and financing-coordination pillars, so international investment, financing and stockpiling operate as one pipeline rather than three disconnected policies.

Cross-cutting theme 1: Engaging Member States

- Leave strategic choices (which materials, stockpile depth targets, priority projects) to the Commission and CRM Board in the light of Intelligence Hub data and give the CRMC itself full operational control over acquisition, release timing and day-to-day portfolio management, so speed in a crisis does not depend on a fresh mandate each time.
- Set up a standing channel for Member States to feed national geological surveys, customs data and industrial mappings into the proposed intelligence hub, so the CRMC is not rebuilding from scratch what national observatories already hold. Work with secondments to dedicated subgroups if necessary.
- Let Member States co-invest into CRMC vehicles instead of only running parallel national schemes, so national and EU funds are pooled and layered project by project rather than competing for the same targets.

- Give the national financing institutions operational in CRM markets a direct seat with the CRMC's financing hub, so coordination happens once at EU level, not bilaterally with Brussels each time.
- Guarantee Member States hosting CRMC stocks or projects a clear, published claim on release and allocation in a crisis, so hosting comes with a visible benefit and not only a burden.

Cross-cutting theme 2: Equipment and processing chemicals, not only raw materials

A similar dependency as the EU has on raw materials runs one step further into the value chain: the machinery used to mine and refine these materials, and the reagents and specialty chemicals that make refining possible. These too can be weaponized in the short-term. A strategy that secures the metals but leaves Europe dependent on imported equipment and chemicals to process them is only half finished. Together with the CRMC, the Commission should announce the intention to:

- Extend the Intelligence Hub's data-collection mandate to cover equipment and specialty-chemical inputs at each stage of the value chain (e.g. solvent-extraction reagents for rare earth separation, electrolytes and precursor chemicals for battery materials, mining and refining machinery) alongside the underlying minerals.
- Bring equipment and chemical suppliers into the same data-sharing obligations as mineral producers. This fits logically with CRMC as a bottleneck in a reagent or a piece of separation equipment can stall a well-financed project as effectively as a shortage of the mineral itself.
- Allow the investment pillar – and stock it accordingly – to finance the equipment and reagent supply chain behind a processing or refining project, not only the mineral-handling steps, when that supply chain is itself the binding constraint.
- Add equipment and chemical inputs identified as single-source or China-dominated to the same early-warning and stockpiling logic used for the metals. For example, separation reagents and magnet-sintering equipment are already tighter chokepoints than several of the ores they process.

About us

The Geneva Platform for Resilient Value Chains is a non-partisan, not-for-profit platform of excellence located within the Centre for Trade and Economic Integration at the Geneva Graduate Institute. Anchored in International Geneva's spirit, and in its trade, sustainability, mediation, and human rights expertise, the Platform focuses on supporting resilient and inclusive value chains that are vital to the energy transition and climate change. The Platform is a network of fellows in all major economies, including Brussels, Berlin, Washington, and New York.

For more information, contact:

Tom Moerenhout
Executive Director
tom.moerenhout@genevaplatform.org

Maximilian Kessler
Fellow, Critical Minerals and Batteries
maximilian.kessler@graduateinstitute.ch