Armament Industry European Research Group

EXTENDING SUPPLY CHAIN SECURITY IN EU DEFENCE FUNDING: FROM COMPONENTS TO RAW MATERIALS

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Armament Industry European Research Group

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ABSTRACT

Russia's invasion of Ukraine, wider instability and US pressure on Europe to take charge of its own defence have led the EU to commit to defence readiness by 2030. This requires Europe to become as autonomous as possible wherever industrial dependence is critical to its capabilities, a considerable challenge given its long reliance on imports, above all from the United States, and the close integration of its main producers with foreign suppliers.

To reduce this dependence without undermining industrial cooperation that remains essential, the EU has cautiously introduced European preference conditions into its defence programmes. Under EDIP grants and SAFE loans, these are limited to a minimum share of component costs that must be European. Yet the rule stops at the component, leaving out the critical raw materials inside it, although Europe depends almost entirely on third countries, above all China, for several of those most critical to defence. Hence a paradox: a rule designed to reduce dependence on an ally may leave Europe more dependent on a strategic competitor.

China's 2025 export restrictions on rare earths, gallium and germanium, and the sharp rise in tungsten prices in 2026, show that this dependence already constrains European defence production. Defence readiness therefore also depends on secure access to critical raw materials, and this is the issue the paper sets out to explore.

It first analyses how the exclusion of critical raw materials from EU funding conditions affects the path towards industrial autonomy that EU defence instruments are meant to support. It then assesses whether the Critical Raw Materials Act (CRMA), the RESourceEU Action Plan and the EDIP Security of Supply Regime are sufficient to protect defence supply chains and finds that they improve awareness of dependencies but leave verifying the origin of materials and reducing exposure largely voluntary for companies receiving EU defence funding. Finally, rather than maintaining the status quo, it suggests a realistic way forward for the 2028–2034 Multiannual Financial Framework: linking EU defence funding more closely to supply chain mapping, supported by emerging origin verification methods, and to diversification wherever viable alternatives exist. Whether such a step is taken will ultimately depend on the Commission's proposals for the next MFF, and on the readiness of the Council and the European Parliament, as co-legislators, to support them.

Keywords : EU | EDTIB | European defence industry | Critical raw materials | CRM | Defence, strategic autonomy | Security of supply.

INTRODUCTION

Russia's invasion of Ukraine in 2022, together with growing US disengagement from European security, has pushed defence to the top of the European agenda after decades of underinvestment. The European Commission has taken the lead, building a framework designed to make Europe capable of defending itself by 2030, increasingly through its own industrial base. Successive strategies laid its foundations and gave rise to two key instruments: the European Defence Industry Programme (EDIP)[1] and Security Action for Europe (SAFE)[2], a €150 billion loan instrument for joint procurement.

To ensure that these funds benefit European industry, SAFE and EDIP share two main eligibility conditions. The first concerns design authority: the contractor must be able to define, adapt and further develop the product without restrictions imposed by third countries or third-country entities. Under EDIP, this applies to all funded defence products, with a transitional derogation for ammunition and missiles until 2033; under SAFE, it applies only to the most complex systems, excluding missiles, ammunition, artillery or ground combat capabilities[3]. The second, and the most relevant for this paper, requires that at least 65% of the cost of components originate in the EU, the EEA-EFTA states or Ukraine[4].

While the regulations do not state it explicitly, the logic behind this rule can reasonably be inferred. For decades, European armed forces relied in particular on the US for much of their high-end equipment, from the F-35 to Patriot air defence systems,[5] and the negotiations over SAFE and EDIP turned largely on how open EU funding should remain to third-country suppliers. The rule that emerged is a compromise between Member States, balancing the ambition of autonomy against the deep dependence of many national industries on US suppliers.[6] A stricter requirement would have favoured the most self-sufficient defence industries, above all France's, while excluding those closely integrated with US supply chains.

[1] Regulation (EU) 2025/2643 of the European Parliament and of the Council of 16 December 2025 establishing the European Defence Industry Programme (EDIP). EDIP provides €1.5 billion in EU grants for 2025–2027 to ramp up defence production, support joint procurement and strengthen supply chains, including €300 million for Ukraine.

2 Council Regulation (EU) 2025/1106 of 27 May 2025 establishing the Security Action for Europe (SAFE) through the Reinforcement of the European Defence Industry Instrument, OJ L, 2025/1106.

3 Regulation (EU) 2025/2643 (EDIP), Article 10(5); Article 12(4) allows the requirement to be met, for ammunition and missiles, through a legally binding commitment to achieve full design autonomy by 31 December 2033. Council Regulation (EU) 2025/1106 (SAFE), Article 16(11). [Paragraph and product scope to verify in the Official Journal. Applies to category two products, such as air and missile defence systems, maritime capabilities, larger drones, strategic enablers, space assets and electronic warfare.

4 EDIP Regulation, art.10 (3), SAFE, art.16.

5 J. Mejino-López and G. B. Wolff, "Europe's dependence on US foreign military sales and what to do about it", Policy Brief 27/2025, Bruegel, 13 October 2025.

6 F. Santopinto, "The involvement of third-country entities in EU defence industrial policies and the 'European Design Authority' concept", Policy Paper #114, ARES Group / IRIS, June 2025.

The rule was therefore calibrated to reduce reliance on third countries without shutting a large part of European industry out of EU funding.

This non-dependence criterion, however, looks only at where components come from, not at what they are made of. Under EDIP, raw materials are not considered components and are therefore left out of the calculation[7], and no other condition in EU defence programmes addresses their origin[8]. A component manufactured in Europe therefore qualifies as European even if the critical raw materials it contains were mined or refined in a third country, very often China, which dominates the extraction or processing of most materials on which modern defence systems depend.[9]

The result is a paradox with serious security implications. A rule designed to reduce dependence on an ally may, by stopping at the component, leave Europe also dependent on a strategic competitor for the materials those components contain. Has Europe strengthened the autonomy of its defence supply chain, or simply shifted its dependence one step further down that supply chain?

The EU is not unaware of this risk, but it addresses critical raw materials outside its defence funding rules. The Critical Raw Materials Act (CRMA) and the RESourceEU Action Plan aim to diversify supply across strategic sectors, including defence, while the EDIP *Security of Supply Regime* provides tools to monitor and manage supply chain disruptions.[10] These instruments, discussed in the following sections, have not yet been translated into criteria for EU defence funding. Left unaddressed, this gap may limit their contribution to a more autonomous European defence by 2030.

Critical raw materials are not the only inputs concerned: other materials and components essential to defence production, such as certain chemicals used in propellants and explosives or printed circuit boards, raise similar security of supply issues[11]. This paper focuses on critical raw materials, as one of the areas where Europe's dependence is particularly acute. Without claiming to settle the question, it examines the risk that the current rule leaves unaddressed and explores how European defence programmes under the next MFF could close that gap.

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7 See EDIP, recital 27 "Raw materials are not considered components". Art 10 (3) and 10(4) do not mention raw materials.

8 Critical raw materials are not the only inputs raising security of supply concerns: certain chemicals used in propellants and explosives, for instance, pose similar challenges. This paper focuses on critical raw materials, where Europe's dependence is most concentrated.

9 *Joris Teer, "Beijing's critical raw material weapon: And how to dismantle it," Chaillot Paper 189, European Union Institute for Security Studies, May 2026,*

10 EDIP Regulation, arts. 2(9) and 56–66. The regime covers "crisis-relevant products", including the raw materials needed for defence products, and provides for supply chain mapping, monitoring and stress tests in normal times, and for information requests and priority orders in a supply crisis.

11 On dependencies and bottlenecks in defence supply chains beyond critical raw materials, see IISS, "Defence supply chains beyond CRMs: dependencies and bottlenecks", Military Balance online analysis, May 2026

WHERE EUROPE IS MOST EXPOSED: CRITICAL RAW MATERIALS, SUPPLIERS AND DEFENCE APPLICATIONS

Raw material dependencies, and the supply risks they entail, have been on the EU agenda for well over a decade. The EU has been mapping them since the 2008 Raw Materials Initiative, its first integrated strategy to secure access to non-energy raw materials.[12] Its list of critical raw materials, 14 in 2011,[13] has been revised every three years and now covers 34, all incorporated into the 2024 Critical Raw Materials Act (CRMA). The Act singles out 17 of them as strategic, based on their importance for technologies used in the green and digital transitions and, for the first time in EU legislation, in defence and aerospace: aluminium, bismuth, boron, cobalt, copper, gallium, germanium, battery-grade graphite, lithium, manganese, nickel, magnesium, platinum group metals, rare earths for magnets, silicon metal, titanium and tungsten.[14] The Joint Research Centre (JRC) foresight study that informed the Act did examine aerospace and defence alongside other sectors,[15] but all are assessed through a single methodology that gives weight to the volumes required and to projected demand growth.[16] Defence systems, which rely on a broader set of materials often used in small volumes but at very high purity, therefore weigh little in the final ranking.

Studies conducted from a defence perspective point to additional vulnerabilities. In 2016, the JRC identified 39 raw materials needed for the alloys, special steels and composites used by European defence industry, about half of them entirely imported from outside the EU, and stressed that the supply risk was even higher for the 47 alloys and composites that depend on them, since these have no ready substitutes.[17] In 2023, The Hague Centre for Strategic Studies (HCSS) ranked 41 defence-relevant raw materials according to the probability of a supply disruption and its impact on defence platforms, from fighter aircraft and frigates to tanks, artillery, missiles and ammunition (Table 1).[18]

[12] European Commission, "The raw materials initiative: meeting our critical needs for growth and jobs in Europe", COM(2008) 699, Brussels, 4 November 2008.
[13] European Commission, "Tackling the challenges in commodity markets and on raw materials", COM(2011) 25, Brussels, 2 February 2011.
[14] Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials (Critical Raw Materials Act), Annex I, Section 1.
[15] M. Christou et al., "Supply chain analysis and material demand forecast in strategic technologies and sectors in the EU – A foresight study", Joint Research Centre, EUR 31437 EN, March 2023.
[16] Ibid., Article 3(2) and Annex I, Section 2. Strategic raw materials are those scoring highest on three criteria: strategic importance (the number of strategic technologies using the material, the quantities required and projected demand for those technologies), projected demand growth relative to current global supply, and the difficulty of increasing production.
[17] Joint Research Centre, "Raw materials in the European defence industry", European Commission, 2016.
[18] B. Girardi, I. Patrahau, G. Cisco and M. Rademaker, "Strategic raw materials for defence: Mapping European industry needs", The Hague Centre for Strategic Studies, January 2023. The report refers to "40 materials", but its list in Appendix I includes 41.

Table 1: Supply risk of defence-relevant raw materials

Degree of risk	Materials
Very high (2)	Aluminium, Graphite
High (21)	Beryllium, Chromium, Cobalt, Copper, Dysprosium, Germanium, Iron/Steel, Lanthanum, Neodymium, Nickel, Platinum, Praseodymium, Samarium, Silicon metal, Tantalum, Tellurium, Terbium, Titanium, Tungsten, Vanadium, Yttrium
Medium (15)	Barium, Borates, Cadmium, Gallium, Indium, Lead, Lithium, Manganese, Molybdenum, Niobium, Silver, Thorium, Tin, Zinc, Zirconium
Low (3)	Gold, Hafnium, Selenium

Source: HCSS, Strategic Raw Materials for Defence: Mapping European Industry Needs (2023).

Two findings emerge from this ranking. First, the highest risks concern the most widely used materials. Aluminium forms the airframes of aircraft, the superstructures of frigates and the bodies of missiles, while graphite is found in the propulsion and electronic systems of most platforms and in rocket nozzles; yet China produces close to half of the world's aluminium and around 70% of its graphite.[19] Second, the high-risk group combines materials whose military relevance is well known, such as rare earths and tungsten, with others rarely discussed, such as chromium, vanadium or steel, essential to armour, gun barrels and submarine hulls. Eight of these 21 materials are not among the CRMA's strategic raw materials, and nickel is included only in its battery grade, not in the forms used for jet engine superalloys. NATO's list of 12 defence-critical raw materials, published in December 2024, points in the same direction:[20] all of them appear in the HCSS ranking, but beryllium is not strategic under the CRMA.[21] The defence and civilian readings of Europe's dependencies therefore only partly overlap.

These materials are deeply embedded in military systems. A single missile combines steel for its warhead and body, dysprosium and neodymium magnets for its control actuators, niobium and borates for its guidance section, and tantalum and copper for its fuze and firing circuits.[22] Gallium is at the heart of modern radars and electronic warfare, germanium of night vision and thermal imaging, and tungsten of armour-piercing rounds, while a single F-35 fighter contains around 417 kg of rare earth materials.[23] These are also the systems Europe is now buying with EU support: SAFE gives priority to ammunition and missiles, artillery, air and

[19] HCSS, op. cit.
[20] NATO, "NATO releases list of 12 defence-critical raw materials", 11 December 2024.
[21] M. Fahlbusch and M. Walschot, "The EU Critical Raw Materials Act and the defence industry", IPIS, 8 July 2025
[22] HCSS, op. cit.
[23] Tech Times, "Rare earth magnets: China's November 10 deadline and US gap money can't close", 2 October 2026.

missile defence, drones and counter-drone systems and ground combat capabilities,[24] all of which rely heavily on these materials. Table 2 summarises where they come from.

Table 2: Europe's main exposures for defence-relevant raw materials

Material	Typical defence use	Main source of EU exposure	Degree of exposure
Rare earths (Nd, Pr, Dy, Tb, Sm)	Magnets in actuators, guidance, radar, drones	China: refines virtually all heavy rare earths and ~85% of light ones	EU imports 100% of processed rare earths
Gallium	Radars, electronic warfare, missile seekers	China: over 90% of world production	~70% of EU supply
Germanium	Thermal imaging, night vision, seeker windows	China: over 80% of world production	High
Tungsten	Penetrators, armour, warheads	China: over 80% of world mining and processing	EU imports ~80% of processed tungsten
Graphite	Batteries, rocket nozzles	China: two thirds of world mining	~40% of EU natural graphite
Titanium metal	Airframes, engines, naval piping	Russia and Kazakhstan: about a third each of EU titanium metal	High, despite sanctions
Nickel, vanadium	Superalloys, armour steel	Russia (pre-2022: ~30% of refined nickel, >40% of vanadium)	Medium to high
Cobalt, tantalum	Superalloys, batteries, capacitors	DR Congo (>60% of world cobalt, with Chinese stakes in 15 of 19 large cobalt mines in 2020) and Rwanda	Medium to high
Niobium, lithium	Superalloys, batteries	Brazil (~90% of world niobium); Chile (~80% of EU processed lithium)	Concentrated, but friendly suppliers
Beryllium	Light airframe parts, sensor housings	United States (~60% of EU supply)	Concentrated, allied supplier

Source: Author's own elaboration based on European Commission, Study on the Critical Raw Materials for the EU 2023 – Final Report (DG GROW, 2023); Joint Research Centre, Raw Materials Information System (RMIS), "CRMs in strategic sectors and technologies: Defence"; JRC, Raw Materials in the European Defence Industry (2016); HCSS, Strategic Raw Materials for Defence (2023). Cobalt mine ownership: The New York Times and Benchmark Mineral Intelligence (2021).

The table points to a clear hierarchy of risk. The most acute exposures concern materials for which China dominates processing and the EU has few alternatives, such as rare earth magnets, tungsten, gallium, germanium and graphite, and whose demand rises most directly with rearmament: more ammunition means more tungsten, more drones and missiles mean more rare earth magnets, gallium and graphite. This dominance often reflects processing rather than geology: refining many of these materials, including rare earths, is polluting and hazardous, and Europe long found it convenient to leave this step to China. A second group lies in Russia, Central Asia and Central Africa, from titanium and nickel to cobalt, the latter often mined by Chinese-owned companies and refined in China. Concentration on Brazil, Chile or the United States carries a different and lower risk.

[24] Council Regulation (EU) 2025/1106 of 27 May 2025 establishing the Security Action for Europe (SAFE) OJ L, 2025/1106.

In short, the table shows that the EU depends on countries with which it has difficult or hostile relations for materials that go into the very systems meant to make Europe defence-ready by 2030.

This risk is already concrete. Since April 2025, China has required export licences for seven medium and heavy rare earths, with detailed end-use data for defence-related applications; by September 2025, only 19 of 141 applications from EU companies had been approved.[25] In October 2025, China added an extraterritorial regime and announced that licences would in principle be refused to defence end users, a package now suspended until 10 January 2027.[26] Gallium prices in Europe rose by more than half in the first half of 2025, with some sellers avoiding defence customers,[27] and tungsten prices tripled in early 2026.[28] The EU–China understanding of October 2026 eases licensing, but offers no guaranteed volumes or long-term commitments.[29] European companies therefore have no assurance of stable access to the materials on which key defence systems depend, and their ability to build the stockpiles they need against future disruptions is seriously affected.

The United States has taken a much firmer approach. After a Chinese-made samarium-cobalt alloy was discovered in a pump of the F-35 in 2022,[30] Congress confirmed that from 1 January 2027 the Department of Defense may no longer buy certain magnets, tantalum and tungsten products mined, refined or separated in China, Russia, Iran or North Korea.[31] Despite generous exceptions, the rule requires suppliers to map their supply chains down to the mine and to diversify them, and it also reaches European companies that supply the US defence market, directly or as subcontractors in programmes such as the F-35. The same products that must be traced to the mine when sold to the United States can still qualify as “European” under EU funding rules without any such verification.

Given Europe’s even greater exposure, a similar ban would not be realistic in Europe today: for many of these materials, alternative sources do not yet exist at the scale required. Yet doing nothing is not a neutral choice either. As long as SAFE and EDIP leave raw materials out

[25] Militär Aktuell, interview with N. Hintermayer (MERICS), 17 November 2025, citing the European Chamber of Commerce in China.
[26] M. Kalwasiński and M. Bogusz, “A blow dealt to Europe’s defence: China steps up control of strategic exports”, OSW, 14 October 2025. The package was suspended for one year after the US–China summit in Busan in October 2025. On 9 November 2026, a day before the suspension was due to expire, China’s Ministry of Commerce extended it until 10 January 2027; see The Star, “China extends suspension of rare earth export controls until January”, 9 November 2026,
[27] Argus Media, “European Ga, Ge prices surge on supply squeeze”, 28 July
[28] Mining Reporters, “Tungsten prices hit record on China export controls and defence demand”, 29 April 2026.
[29] Mining SEE, “EU-China rare-earth understanding offers Europe relief but preserves supply dependence”, 12 October 2026.
[30] Breaking Defense, “F-35 deliveries suspended after finding Chinese alloys in magnets”, September 2022.
[31] 10 U.S.C. § 4872, “Acquisition of sensitive materials prohibited”, as amended; Defense Federal Acquisition Regulation Supplement, clause 252.225-7052, “Restriction on the Acquisition of Certain Magnets, Tantalum, and Tungsten”, final rule, Federal Register, 30 May 2024.

of their scope, the EU will continue to finance the expansion of defence production without knowing, or influencing, how exposed that production is to the decisions of third countries.

REDUCING DEFENCE SUPPLY CHAIN DEPENDENCIES: THE LIMITS OF CURRENT EU INSTRUMENTS

The EU has not ignored its raw material dependencies. Since 2024, it has put in place three main instruments: (1) the Critical Raw Materials Act (CRMA) and (2) the RESourceEU Action Plan, which aim to diversify supply across the economy, including for defence, and (3) the Security of Supply Regime established under EDIP, the only one designed specifically for defence supply chains. With the partial exception of the EDIP regime, these instruments were designed independently of the conditions attached to EU defence funding. This section examines what each of them does for defence, and whether together they can close the gap left by SAFE and EDIP.

The Critical Raw Material Act (CRMA)

Adopted in 2024, the CRMA sets four benchmarks for 2030: 10% of EU consumption extracted in Europe, 40% processed and 25% recycled, with no more than 65% of any strategic raw material coming from a single third country.[32] The EU intends to pursue these quantified targets by identifying key strategic industrial projects in the fields of extraction, processing and recycling, with a view to supporting them through streamlined authorisation procedures and incentives designed to attract investors.

By October 2026, 106 projects had been selected, which the Commission expects to allow the EU to meet its 2030 benchmarks for several materials, including rare earths, nickel and tungsten.[33] These projects, however, will take years to deliver. Permitting alone can exceed a decade, as for the Kiruna rare earth deposit in Sweden,[34] and according to EU Institute for Security Studies, that diversification is not on track to replace Chinese-dominated production within the next decade.[35] The CRMA's horizon and the 2030 defence readiness horizon therefore do not coincide.

The CRMA also requires large companies using strategic raw materials to manufacture certain strategic technologies, such as batteries, renewable energy equipment, aircraft, drones, satellites and advanced chips, to assess their supply chain risks at least every three years. They

[32] European Commission, "European Critical Raw Materials Act".
[33] European Commission, "Commission selects 46 new Strategic Projects to bolster the EU's supply of critical raw materials", press release IP/26/2113, Brussels, 9 October 2026.
[34] A. Leichthammer, "The EU's critical raw materials predicament: ReSourceEU to the rescue?", Jacques Delors Centre, 19 December 2025.
[35] J. Teer, "Beijing's critical raw material weapon – And how to dismantle it", Chaillot Paper, EU Institute for Security Studies, May 2026.

must map where their materials are extracted, processed and recycled, identify possible disruptions and take mitigating steps where risks are significant.[36]

This is the closest the EU comes to a mandatory supply chain assessment, where companies are required to have full visibility over their supply chains. However, this rule concerns only a limited number of defence and dual use systems manufacturers. It covers aircraft and drones, but not ammunition, missiles, armoured vehicles or naval vessels; it excludes the many small and medium-sized suppliers on which defence production relies; and it is not linked to EU defence funding.

RESourceEU

Presented in December 2025 to accelerate the CRMA's implementation, RESourceEU concentrates support on rare earth permanent magnets, battery raw materials and defence-related raw materials. It coordinates funding sources such as InvestEU, the Innovation Fund and EIB guarantees, and seeks to fast-track permitting.[37] It also establishes a European Critical Raw Materials Centre to provide market intelligence and coordinate joint purchasing and stockpiling.[38] Three features, however, limit its reach for defence. These tools are very recent: the Centre and the pilot stockpile only became operational in 2026. They remain largely voluntary: stockpiling is still a national responsibility, the EU Stockpiling Strategy is not binding, and joint purchasing depends on companies choosing to take part. They also lack transparency: the funding, ownership and release rules of the pilot stockpile have not been made public, making it unclear whether defence needs would be prioritised in a crisis. Moreover, stockpiles can soften the impact of short-term disruptions, but they leave the underlying dependence unchanged. RESourceEU thus channels CRMA support towards a few priority sectors, including defence, but sets no measure to strengthen the supply chains of defence companies whose production is expanding thanks to EU funding.

The European Defence Industrial Programme (EDIP) and the Security of Supply Regime

Finally, within EDIP itself, the 65/35 component rule leaves critical raw materials aside, and the only provision that addresses them is the Security of Supply Regime. Under this regime, the Commission, supported by a Defence Security of Supply Board bringing together the Member States, the High Representative and the European Defence Agency, maps, monitors

[36] Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials (Critical Raw Materials Act), Article 24.
[37] European Commission, "RESourceEU Action Plan: Accelerating our critical raw materials strategy to adapt to a new reality", Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2025) 945 final, Brussels, 3 December 2025.
[38] International Energy Agency, "RESourceEU Action Plan", Policies database.

and stress-tests the supply chains of "crisis-relevant products", defined as "defence products, or components or raw materials thereof, or any products or services critical to their production". In a supply crisis, it can request information from companies and prioritise orders from Member States in severe difficulty. For finished defence products, further measures include faster intra-EU transfer licences, faster permitting for new plants and additional EDIP funding.[39] The regime thus gives the EU a clear picture of how defence supply chains are composed and prepares responses for when they come under pressure. It does not, however, require companies to strengthen their supply chains, and it allows concrete action only once a crisis is unfolding. A company receiving EDIP funding, or supplying equipment bought with SAFE loans, can therefore remain dependent on Chinese critical raw materials. The regime will record that dependence, but can only respond to a crisis, not prevent one.

The European Defence Agency also addresses raw material dependencies, mainly through its Incubation Forum for Circular Economy in European Defence (IF CEED), which has funded pilot projects on the secure supply, reuse and recycling of critical raw materials. These remain however small-scale research efforts, with budgets of a few hundred thousand euros, rather than instruments to reduce industry's exposure40.

A persistent problem

Taken together, the three instruments point in the same direction. The CRMA and RESourceEU focus on supply: they finance new sources of extraction, processing and recycling, most of which will take years to come on stream. The CRMA's company risk assessments and the EDIP Security of Supply Regime focus on knowledge: they help companies and the Commission see where dependencies lie. Neither group of measures, however, is linked to EU defence spending. A company receiving SAFE or EDIP funds is not required to know where its critical raw materials come from, nor to reduce its exposure where an alternative exists. Can instruments that observe dependencies, without requiring anyone to reduce them, protect the supply chains that the EU budget is expanding?

If future European funding is to expand defence production while also reducing supply chain exposure, the findings of the Security of Supply Regime and of the CRMA's risk assessments will need to be connected, in some form, to the funding itself.

[39] Regulation (EU) 2025/2643 of the European Parliament and of the Council of 16 December 2025 establishing the European Defence Industry Programme and a framework of measures to ensure the timely availability and supply of defence products (EDIP), OJ L, 29 December 2025.

[40] European Defence Agency, "EDA's forum for circular economy selects three new projects for green defence", 11 April 2025.

THE WAY AHEAD: OPTIONS FOR CRITICAL RAW MATERIALS REQUIREMENTS IN FUTURE EU DEFENCE PROGRAMMES

The negotiation of the 2028–2034 Multiannual Financial Framework, and of the successors to EDIP and SAFE, offers an opportunity to close the gap identified above.

Several options can be considered, but three of them appear either insufficient or unrealistic.

Maintaining the status quo would impose no new burden on industry and avoid reopening a difficult compromise between Member States, but as EU defence spending grows, the EU would be financing a rapid expansion of production whose exposure to Chinese and Russian raw materials it knows but does nothing to reduce. It would also leave part of European industry with two standards: from 2027, the largest groups and their suppliers, including those in the F-35 supply chain, around a quarter of whose components are produced in Europe,[41] will have to trace the origin of key materials for their US customers, while the same products can still qualify as "European" under EU funding rules.

At the opposite end, a US-style ban on materials from countries of concern would send the strongest signal, but is not feasible in the foreseeable future: for heavy rare earths, gallium or germanium, there is no alternative supply at the scale required, and a ban would exclude much of European industry from EU funding, delay deliveries and reopen divisions between Member States.

Finally, extending the 65%/35% rule to raw materials would be a straightforward but ineffective solution. Since the rule is calculated on the basis of component costs and raw materials generally account for only a few per cent of a system's value, including them would make very little difference to the outcome. Conversely, setting a minimum European share for each raw material would go too far, working in practice as a ban and excluding most suppliers for materials with no European alternative. When it comes to critical raw materials, the issue is not how much they cost, but how vulnerable their supply chains are.

A more realistic way forward: supply chain due diligence and targeted diversification

This paper therefore suggests a more realistic option, which would complement the 65%/35% component rule. Alongside the share of a system's value that is European, it would also take into account how exposed the supply of its critical raw materials is to disruption. Companies receiving EU defence funding would be encouraged to map and assess their critical raw

41 Defense Magazine, "Europeanisation of the F-35", 18 September 2023,; Leonardo, "Further information about the F-35 program", 9 April 2015,

material supply chains, and to diversify where a viable alternative exists. Rather than creating a new instrument, this approach would bring together those the EU has already developed[42].

Such an approach would also respond to the joint statement on defence security of supply endorsed by EU defence ministers on 17 November 2026, which calls for defence requirements to be systematically taken into account in relevant EU initiatives and for the future Multiannual Financial Framework to reflect the urgent need to strengthen security of supply in defence.

The starting point would be the EDIP Security of Supply Regime, which should give the Commission a clear picture of which critical raw materials the European defence industry depends on, and on which suppliers. On that basis, the Commission could assess, material by material, whether dependence can be reduced through substitution, alternative suppliers or new capacity expected from CRMA Strategic Projects and publish the results.

Companies applying for defence funding under the successor to EDIP would then map their supply chains, carry out a risk assessment similar to the one large companies already conduct under the CRMA, and indicate whether the alternatives identified by the Commission are available to them. Where a viable alternative exists, they would be expected to use it. Unlike the US approach, no source would be banned: diversification would only be sought where it is possible. Companies going further, for example by sourcing from Strategic Projects or using recycled materials, could benefit from a higher funding rate, and the same approach could be extended to SAFE-funded procurement.

This approach would also have a second benefit: it would connect EU defence spending with the development of European raw material supply. Strategic Projects often struggle to find long-term buyers, and defence companies encouraged to diversify could provide precisely that demand.

Its credibility would depend on the ability to verify where critical materials actually come from. Today, supply chain mapping relies mostly on invoices, supplier declarations and customs records, which show where a material was last shipped from, not where it was mined or refined; once a metal has been blended, re-exported or incorporated into a component, its origin is easily lost. Other approaches are being developed to complement these documentary sources, among them scientific methods that analyse the geochemical signature of minerals, such as trace elements and isotope ratios, to test their declared origin. Germany's Federal

42 Joint statement on security of supply in defence, endorsed by EU defence ministers at the European Defence Agency Steering Board, 17 November 2026; see Agence Europe, "European ministers approve eight opportunities for cooperation", Europe Daily Bulletin No. 13983, 18 November 2026.

Institute for Geosciences and Natural Resources (BGR) has used such an "analytical fingerprint" since 2006 for tin, tantalum and tungsten ores,[43] and other laboratories, in France and Austria, are extending these techniques to other materials.[44] Combined with digital chain-of-custody systems, they could allow origin claims to be checked at several stages of the supply chain.

As these methods are still maturing, particularly for refined metals and components, the EU could support their development through the Critical Raw Materials Centre, the EDA[45] and the European Defence Fund, by funding shared reference databases and testing protocols and accrediting laboratories

The design of such an approach would also need to address several practical challenges. To limit the administrative burden on small and medium-sized suppliers, a common EU service, for instance under the Critical Raw Materials Centre, could provide shared verification tools, and expectations could be proportionate to company size and material criticality. Sensitive supply chain data would need to be handled within the secure framework of the Security of Supply Regime and the Defence Security of Supply Board.

To avoid slowing down rearmament, the approach could be phased in, starting with a short list of high-risk materials, such as rare earths, tungsten, gallium and germanium, and with reporting before diversification.

Finally, the Commission would need to update its list of available alternatives regularly, as new Strategic Projects start production, so that companies are only asked to diversify towards sources that actually exist.

CONCLUSION

The 65%/35% rule in EDIP and SAFE ties EU defence funding to reducing Europe's reliance on third-country components. Because it stops at the component, however, it can still finance products whose critical raw materials come from China, Russia or other countries with which the EU has difficult relations. The United States has chosen to exclude such sources from its supply of key defence materials. The EU has taken a different path: the CRMA and RESourceEU expand European extraction, refining and recycling, while the EDIP Security of Supply Regime

[43] Federal Institute for Geosciences and Natural Resources (BGR), "Introduction to the Analytical Fingerprint".
[44] Oritain, "Oritain accelerates global expansion, supported by laboratory acquisitions and new membership model", press release, 6 November 2025.
[45] Recycling could also become a secondary source of supply for defence. Increasing the budget of the European Defence Agency's IF CEED under the next MFF would allow it to move from small pilot projects to more ambitious initiatives on recycling critical raw materials.

improves awareness of defence supply chains and the ability to respond to crises. None of these measures, however, requires companies receiving EU defence funding to reduce their own raw material dependencies.

The defence programmes of the 2028–2034 MFF offer the opportunity to close this gap, and several options are available. Maintaining the status quo would avoid new burdens but allow dependencies to deepen as EU defence spending grows. A US-style ban would send the strongest signal but is not feasible today, given the absence of alternative sources for several materials. Extending the 65%/35% component rule to raw materials would be simple but ineffective, since their low cost makes them almost invisible in a value-based calculation.

This paper has therefore suggested a more realistic option: complementing the 65%/35% component rule with a supply chain dimension, encouraging companies receiving EU defence funding to map their critical raw material supply chains and to diversify where a viable alternative exists. The Commission would draw on the EDIP Security of Supply Regime to assess, material by material, where dependence can be reduced; companies would map their supply chains, supported by emerging origin verification methods; and defence funding would create the demand that makes CRMA Strategic Projects viable. In the meantime, the EDA's IF CEED could receive more resources to scale up its work on recycling critical raw materials for defence.

European industry is already familiar with requirements of this kind. Since 2021, the EU Conflict Minerals Regulation has required importers of tin, tantalum, tungsten and gold to carry out due diligence on their supply chains, and European companies supplying the US defence market will soon have to trace key critical materials down to the mine. Questions remain, however. Past Commission efforts to map defence supply chains have met with limited success, as companies are reluctant to share information they consider commercially sensitive. How much cost and administrative burden can defence companies, especially SMEs, absorb without slowing the ramp-up the programmes are meant to deliver? How can sensitive supply chain data be collected and shared securely?

Above all, these are political choices. It will be up to the Commission to propose the next generation of defence programmes, and to the Council and the European Parliament to adopt them, with Member States, which negotiated the 65%/35% component compromise, playing a decisive role. So far, responsibility has tended to be passed back and forth: governments often regard raw material sourcing as a matter for industry, while companies argue that they cannot diversify without clear rules and public support.

Breaking this circle requires a political decision. The question for the next MFF is therefore less whether such requirements are technically possible than whether EU Institutions and Member States are prepared to use a growing EU defence budget not only to expand defence production, but also to strengthen the resilience of the supply chains on which it depends. Underlying this choice is a more basic one: whether European defence autonomy is measured at the assembly line or across the supply chain as a whole.

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