

Critical Raw Materials Act

Enabling conditions for a thriving
European aluminium value chain

Position paper

November 2022

European Aluminium, the industry association of the full aluminium value chain in Europe, **welcomes the Critical Raw Materials Act** as an opportunity to deliver a European industrial agenda that will support sustainable growth and strategic autonomy in raw materials while ensuring raw materials production and transformation at the highest environmental and social standards. We believe that strengthening **Europe's strategic resilience in raw materials is now, more than ever before, of crucial importance**. To strengthen the resilience of our industries we need a full value chain approach to help increase their supply security, obtain greater investments and boost recycling capacity. Increasing and preserving the capacity of Europe's low-carbon primary aluminium production (including the production of alumina) and world-class recycling sector is the only way to meet growing demand and overcome import dependencies.

Aluminium is critical for a wide range of applications necessary for the green transition and an indispensable component of Europe's strategic industrial ecosystems, above all, renewable energy generation and electricity transmission, electric vehicles and batteries, aerospace, energy-efficient buildings as well as medical and food packaging and defence applications. Our industry is a key enabler of a low-carbon¹ and circular economy², being the base metal which is indispensable for the green transition, playing a unique role in Europe's transformation to a more sustainable and digital economy. The classification of raw materials should better capture their strategic roles in the twin transitions according to:

1. Relevance to the twin transition and ecosystems and applications/technologies deemed critical for the transition.
2. The risk of carbon leakage
3. Thresholds for supply shortage risks as well as supply concentrations
4. Relevance of a material for societally critical sectors in Europe

The European Union needs a **long-term strategy on safeguarding its essential raw materials industries**, including aluminium. The CRM Act should provide clear guidance and measures to strengthen existing European raw material value chains, facilitate European access to raw materials globally, foster domestic investments in the EU and to boost the transition to a thriving circular economy by supporting recycling.

For the successful implementation of the CRM Legislation, we have outlined **the following seven enabling conditions**:

- 1. Aim for strategic autonomy*
- 2. Improve classification of raw materials to better capture strategic roles in the twin transitions*
- 3. Facilitate the recovery of valuable Secondary Raw Materials (SRMs) and incentivise their use in Europe*
- 4. Safeguard and support the sustainable growth of raw material production in Europe*
- 5. Ensure a long-term focus by establishing targets and harnessing the potential of Member States*
- 6. Boost investment confidence by gearing up existing and new financing mechanisms*
- 7. Support the long-term resilience of European industrial ecosystems*

¹ Minerals, such as Aluminium, "that are both "high-impact" and "cross-cutting" will be used in a wide range of technologies and a great amount of them will be required to meet projected demand in a low-carbon world. One example is **aluminum: it is used widely for both energy generation and storage technologies, with roughly 103 million tons of aluminum needed to supply 87% of solar PV and a range of other clean energy technologies to achieve a below 2°C future. Aluminum is thus a "critical" mineral because it will be necessary for the clean energy transition.**" Source: World Bank (2020), [The new kids on the block: redefining "critical" minerals essential for a clean energy future \(worldbank.org\)](#)

² Aluminium remains one of the most recycled materials on earth with almost 75 per cent of the aluminium ever produced is still in use today

1. Aim for strategic autonomy

Achieving strategic autonomy should be at the core of the EU economy's future. To implement the European Green Deal, Europe needs to reduce dependencies by fostering domestic value chains and better diversifying low-carbon import sources. When engaging with international partners on trade negotiations and multilateral exchanges such as the G7 and the G20, securing strategic and critical supply chains should be considered a key priority and relevant measures should be taken to guarantee a continuous, viable and uninterrupted supply of sustainably sourced and produced primary and secondary materials. Raw material partnerships are a vital element to secure longstanding and cost-effective supply chains. Promoting this approach with close-proximity trade partners and like-minded countries, such as within the European Economic Area bloc (particularly Norway and Iceland), would strengthen the EU single market.

Data show that European raw material sectors, above all the aluminium industry³, are particularly exposed to unfair trade practices, such as dumping or state-subsidised overcapacities. Therefore, Europe needs to continue strengthening and, most importantly, enforcing its trade defence tools to level the playing field for European aluminium producers. For example, by making a better use of the antidumping instrument. **European Aluminium encourages the European Commission to explore ways to enable our economies to overcome or avoid injury altogether, by opening cases already at the “threat of injury” stage.** By speeding up actions, companies would be better and quicker protected, reducing the risk of production withdrawal. As we have seen in the case of magnesium, once European production stops, it is very difficult to re-establish it. The European Union has the trade policy arsenal at hand to defend legitimate interests of its industry. But there must be a will to use it.

In addition to defensive instruments, the European Union should use partnerships with like-minded third countries adhering to the principles of fair trade to support supply throughout the aluminium value chain. To protect the competitiveness of our industries, free trade agreements should promote the highest level of European environmental and social standards. In the aluminium industry, the partnership between the EU and Norway is a long-standing success story, for example.

2. Improve the classification of raw materials to better capture strategic roles in the twin transition

Currently, EU policy focuses on assessing metals based on their criticality (scarcity, import dependency...), which is a variable concept, with the risk of missing to address longer-term risks and opportunities, without focusing on raw materials which are strategic but not (yet) critical. Metals, such as aluminium (including its necessary alloy metals such as copper, manganese, silicon, magnesium, tin, etc.) are essential raw materials to downstream industries producing goods of imperative importance for the European economy and society, such as high-tech engineering applications, aerospace, defence, or medical equipment. In addition, deploying the necessary clean energy technologies to meet the EU's 2050 climate-neutrality goals and successfully building Europe's respective value chains will require an increase of

³ IMF, Subsidies, Trade, and International Cooperation, 22 April 2022, <https://www.imf.org/en/Publications/analytical-notes/Issues/2022/04/22/Subsidies-Trade-and-International-Cooperation-516660>. OECD, Measuring distortions in international markets: Below-market finance, 12 May 2021, https://www.oecd-ilibrary.org/trade/measuring-distortions-in-international-markets-below-market-finance_a1a5aa8a-en.

strategic raw materials. By itself, the EU energy transition will lead to a 30% increase in aluminium demand by 2040⁴. A more efficient and forward-looking approach should cluster raw materials based on their essential uses to underpin their relevance for the strategic resilience of European manufacturing and consequently guide to a stable and predictable treatment in future regulatory measures.

Concretely, the upcoming CRM Act should look beyond the narrow existing definition of ‘critical’ raw materials and should focus on all raw materials that will be **strategically important** for Europe moving forwards. All the following criteria should be considered for the assessment of strategically relevant metals:

- **Relevance to the twin transition and ecosystems** and applications/technologies deemed critical for the transition. Both the *IEA raw materials classification* and the EU’s 2020 foresight study on *Critical Raw Materials for Strategic Technologies and Sectors in the EU* offer a first starting point. Nevertheless, to reach the aims of the European Green Deal, more materials than those featured there will be needed. Therefore, a flexible definition needs to be established to adapt raw materials needs to future technological and market developments.
- The **risk of carbon leakage** for a metal producing industry in Europe to assess the overall outlook of potential future import dependencies. Unfortunately, carbon leakage is already a documented reality in the aluminium sector. Over the past 15 years, European primary aluminium production has increasingly been displaced by production in third countries, leading to a large net increase in global emissions (the carbon footprint of producing aluminium in Europe is around 50% lower than the global average).
- Based on EU materials monitoring, thresholds for **supply shortage risks and supply concentrations** should be established and an alert mechanism should be created, triggering a set of actions for when a material is close to reaching these thresholds. Once a material is considered critical, it is normally too late to maintain a vibrant production in the EU, as illustrated in the case of magnesium at the end of 1990s.
- **Relevance of a material for societally critical sectors** in Europe, such as pharmaceuticals, mobility, transport or defence and aerospace, etc.
- **Cross-sectorial relevance of a raw material.** Aluminium, for example, is used in a wide range of goods and applications. Supply disruptions at any point of the multi-step production and transformation process of aluminium will have an immediate impact on related industries, such as the mobility and transport or buildings and construction. The higher the cross-sectorial impact of a raw material, the higher the classification of a material as strategic should be.
- **Sensitivity level of a raw material as regards continuity of production.** Many raw materials depend on a continuous production process. For primary and secondary aluminium production, for example, halting the production process for more than a few hours would lead to the irreparable destruction of industrial equipment, often resulting in the complete shutdown of a production line or site.
- **Replacement risk by 3rd-country suppliers.** Europe hosts several raw material industries that face an immediate replacement risk by production capacity in third countries, above all China. In the aluminium industry, for example, China has built up a state-subsidised market share of 60% in only some years. Any market changes, such as surging energy costs in Europe, lead to immediate import increases and long-term market share losses for European companies.

⁴ KU Leuven, Metals for Clean Energy, 2022, <https://eurometaux.eu/media/jmxf2qm0/metals-for-clean-energy.pdf>

3. Facilitate the recovery of valuable Secondary Raw Materials (SRMs), such as scrap, and incentivise their use in Europe

Promoting measures to increase the efficiency of collection, sorting and pre-treatment of SRMs, such as aluminium scrap, should be at the forefront of this initiative. Harnessing the circularity potential of materials such as aluminium will serve to boost the supply of recycled materials in Europe, which will in turn offer benefits for people and the planet⁵.

Incentivising and expediting the required (licensing etc) processes for the use of SRMs in Europe will allow for more of these valuable materials to remain in circulation within the European economy and support the full recycling value chain. This can be achieved by supporting the growth of reverse-logistics (where feasible and applicable) and reducing the overall administrative and financial cost of logistics when materials are transported⁶ between European facilities; by exploring measures to support the uptake of SRMs (such as by Green Public Procurement, recycled content measures⁷, ...) in the economy; by creating a level-playing field vis-à-vis our global competitors, ensuring that any SRM exported will meet the same ESG conditions in destination countries. Considering the dual value of SRMs for both Europe's raw materials supply security as well as energy reduction objectives, ensuring that scrap stays in Europe is a key element of an effective and future-proof EU raw materials legislation.

At the same time, European Aluminium hopes to see barriers arising from inconsistencies around the interpretation of by-product concepts and End-of-Waste interpretations in the different Member States to be removed to assist sectors in valorising production residues and by-products and increasing resource efficiency and circularity across entire industrial ecosystems.

In addition, to maintain the European circular economy, it must be ensured that all end-of-life scrap can be recycled without restriction in the future.

4. Safeguard and support the sustainable growth of raw material production in Europe

Given the still limited availability of SRMs it is crucial to safeguard European primary production and support the entirety of the sector by creating the necessary stimulus via market pull mechanisms and apply Europe's trade defence measures when justified. To strengthen material sovereignty and boost European competitiveness via sustainable innovation, the Ecodesign for Sustainable Products Regulation (ESPR) should work in conjunction with market instruments tailored to support the uptake of sustainable products. The EU being a trailblazer of sustainability should aim at strengthening the

⁵ In our [Circular Aluminium Action Plan](#), European Aluminium quantifies the contribution of our sector to the EU's Strategic Autonomy and Green Deal ambitions by forecasting towards 2030 and 2050. We estimate that the amount of European aluminium available for recycling will **more than double by 2050** (from 3.6 million tonnes per year in 2019 to 6.6 million tonnes in 2030 and to 8.6 million tonnes by 2050), **aiding to avoid up to 39 million tonnes of CO2 emissions per year** while generating **added value** for the European economy. The **economic value of aluminium recycling can be effectively multiplied by four** as today, the reprocessing of end-of-life aluminium into a new, valuable raw material is a €3 bn market which can grow to a **€12 bn market by 2050**, adding a multitude of socio-economic benefits.

⁶ In cases where it is feasible to transport materials by rail, thus reducing transportation emissions, a full reduction of the transportation costs should be considered.

⁷ For some products, measures such as recycled content requirements are useful to accelerate performance on the circular economy and could further drive high-quality and closed-loop recycling. Its impact and feasibility should be carefully assessed per product category, based on market applications, the availability of viable, well-sorted scrap streams and the **different lifespans of fast-rotating vs. long-lifetime products**, as this is a necessity to determine where such provisions will yield the most desirable results. From the perspective of a permanent metal, it has to be noted that not all product categories require the same level of stimulus. Increasing end-of-life recycling by supporting the most efficient collection and sorting of end-of-life products, so that more secondary raw materials will be available on the market for high-quality recycling, is also key to achieving a sustainable circular economy

competitiveness of domestic industries, which will ultimately lead to greater resilience and achieve progress along the triple bottom line (e.g. *safeguarding environmental health, social well-being, and a just economy*).

The European aluminium industry has lost over 30% of its primary production capacity since 2008, despite the steadily growing demand for aluminium in Europe and globally, and a carbon footprint of only one third of the Chinese average, for example. This is undeniable evidence of carbon leakage in the sector. China has become the biggest producer of primary aluminium (around 39 million tons per year) in recent years, followed by India (3.9 million tons), Russia (3.7 million tons), Canada (3.1 million tons) and the Middle East (2.6 million tons)⁸. Last year, Europe's depended by 47% on primary aluminium import⁹.

The ongoing energy crisis in Europe and legislative uncertainty (see ETS reform and CBAM), have exacerbated the downwards trend in the past twelve months. Since the start of the energy crisis in September 2021, EU primary production has been curtailed by another 50%¹⁰. This means that only about a third of capacity present in Europe before 2008 has survived till 2022. The primary aluminium sector is heavily dependent on constant baseload energy supply. Looming gas shortages also threaten the viability of aluminium's downstream industry, which depends on gas and lacks substitution options in the short to medium term. Aluminium semi-fabrication (extrusion and rolling), which faces a high exposure risk to dumped products originating from China, requires a constant gas supply for example.

Increased demand in raw materials for the green transition will lead to incremental demand in energy, and vice-versa. **Therefore, supporting raw materials and sustainable growth should come in conjunction with supporting facilitated access to renewable energy and measures to address the disproportionately higher energy costs industry faces in Europe compared to global competitors**, with electricity for instance representing approximately 40% of production costs for primary production.

The upcoming Solar Strategy foresees a massive deployment of solar PV energy (up to 750 GW_{DC} by 2030), meaning up to 10 additional million tonnes of aluminium. To achieve the recently increased renewable energy objectives, it is important to re-establish the entire solar value chain in Europe, including raw materials¹.

The CRM ACT should provide enabling conditions for raw materials industries to conclude PPAs (via for example new incentives for electricity producers to use PPAs with industry as a hedging instrument, creation of mechanisms to deal with shaping/firming costs¹¹, guarantees of full compensation of indirect carbon costs under the EU ETS, urging Transmission System Operators (TSOs) to grant long-term cross border transmission rights where necessary...¹²) and ensure the Renewable Energy Directive (RED) dispositions as well as new RePowerEU initiatives. Where the switch to electricity is not possible in the short term, as for instance for the aluminium transformation and recycling segment of the value chain, Aluminium producers must have access to low-carbon gases and fuels at competitive prices. New infrastructure for hydrogen and other low carbon fuels should be financed via public finances and EU funding programmes. The European aluminium industry needs long-term mechanisms to facilitate the production, accessibility, and consumption of decarbonised energy at globally competitive prices.

⁸ Elements, How aluminium is made, 12 August 2022, <https://elements.visualcapitalist.com/how-is-aluminum-made/>

⁹ European Aluminium, Digital Activity Report 2021/2022, 2021, <https://www.european-aluminium.eu/activity-report-2021-2022/market-overview/>

¹⁰ See our [paper](#) on the impact of the electricity crisis on European primary capacity and the climate, June 2022

¹¹ Such as the Green Pool concept. Please find [here](#) the detailed green pool proposal by ENERVIS, March 2021

¹² For more details, see our [Response](#) to EU public consultation on RES permit granting processes and Power Purchase Agreements (PPAs), April 2022

5. Ensure a long-term focus by establishing self-sufficiency targets

Safeguarding Europe's strategic resilience and sustainable growth requires a long-term approach which should be benchmarked along the way by clear targets to ensure Europe's raw materials strategy is on track to deliver the best possible outcome.

The upcoming CRM ACT should facilitate a high ambition to achieve a high level of self-sufficiency for European Aluminium industry by aiming for domestic sectors to supply with materials of the European market demand by 2030:

- **A minimum level of self-sufficiency:** Aim for at least 75% of EU demand to be supplied by EU + EFTA by European production (at the refining/smelting and recycling level)
- **A maintenance of today's industrial base:** Avoid a contraction of the EU's existing industrial base and its contribution to growing demand levels
- **A diversified global supply:** Ensure that no single third country has a significant EU import share at raw materials level or at product level. Such a target should complement and support the ambition to achieve a minimum level of self-sufficiency.
- **Support the growth of circular economy business models,** by stimulating investments in recovery and separation technologies for CRMs

The above targets should be codified into EU law, in the form of **binding targets** included in the CRM Act.

6. Boost investment confidence by gearing up existing and new financing mechanisms

Boosting investment confidence will allow for greater economic resilience and increased private-public funding which will speed up delivery of related projects in turn. European competitive soft funding and risk-reducing mechanisms are necessary to create a level playing field within the EU and beyond. European Aluminium encourages the use of instruments such as:

- **Important Projects of Common European Interest (IPCEIs)** to facilitate the roll-out of targeted raw materials projects in the EU, which would be labelled as of European interest, consequently benefitting from streamlined procedures and better access to finance.
- The **InvestEU Fund** to direct funding towards the whole European raw materials value chain. The policy windows of **'Sustainable infrastructure'** and **'Small and medium-sized'** could be geared up to direct funding towards **strategic investments** including Projects of Common Interest (PCIs). Such an action could direct more funding towards strengthening the EU's strategic resilience in raw materials.
- A **dedicated lending platform for raw materials under the European Investment Bank.** Lending, in the form of debt finance and loan guarantees, is a necessity to de-risk and crowd-in investments. The EIB could support increasing investment confidence and support the full raw materials value chains by creating a dedicated thematic lending platform to boost the production of strategic and critical raw materials in Europe.

- The **European Raw Materials Alliance (ERMA)**. As a principle, promoting and supporting ERMA’s role in reducing Europe’s raw materials’ dependency on third countries and diversifying the supply from both primary and secondary sources, could direct a greater pool of public and private finance towards the European raw materials industry.

7. Support the long-term resilience of European industrial ecosystems

Supporting European industrial ecosystems such as battery manufacturing or solar power generation cannot come without a **holistic full-value-chain approach**. Accounting for all stages in the production is vital to ensuring real resilience of European ecosystems – today and in the future. European Aluminium recommends the introduction of the following mechanisms to establish fully integrated strategic ecosystems:

- Support processes which adhere to the principle of **‘Industrial Symbiosis’** to harness the potential of cross-fertilisation, especially as regards production residues.
- **More industrial Alliances:** promoting an integrated vision of industrial value chains should be at the forefront of this initiative. With the Battery Alliance or the new Solar Alliance, the EU has taken an important step towards boosting industrial partnerships and enabling cooperation across sectors and Member States. In light of Europe’s raw materials dependencies, raw materials must be considered as a critical element in these Alliances and enabling measures have to be implement, such as mapping exercises. Without, Europe cannot effectively meet its green transition objectives and decrease import reliance¹³ that pose both an economic and environmental threat.
- As regards the **European Raw Materials Alliance (ERMA)**, European Aluminium hopes to see more activities around the strengthening of existing European raw material value chains, as well as mapping exercises on raw materials interdependencies to assess and address future market dynamics and better understand future transnationality challenges and bottlenecks of value chains.
- Instruments to create and support a vital business environment: national recovery plans, endorsement of [REPowerEU chapter art 21c,1d](#) (“...support of the value chains in key materials and technologies linked to the green transition”),simplifying rules and regulations and making full use of existing instruments such as IPCEIs, and taxonomy.
- **Research, development and innovation:** Encourage collaboration between research institutions and industry to carry out technology cooperation, development and exchange of expertise. **Horizon Europe**



¹³ IEA report on Solar – China’s share across all stages of solar panel manufacturing exceeds 80% - this is more than double of China’s share of global PV demand. The delocalisation of the European solar industry has cost the continent thousands of jobs.

funding should be directed towards more raw materials projects and dedicated public-private partnerships at EU level should be considered.

- **Cross-policy coherence:** Ensuring complementarity and common objectives across a number of different policy areas, is a vital consideration and a necessity to ensure continuity, a successful implementation and the long-term success of this initiative.

About European Aluminium: European Aluminium, founded in 1981 and based in Brussels, is the voice of the aluminium value chain in Europe. We actively engage with decision makers and the wider stakeholder community to promote aluminium's strategic role, secure growth, and stress our metal's contribution to meeting Europe's sustainability challenges. We do this through environmental and technical expertise, economic and statistical analysis, scientific research, sharing of best practices, and public affairs and communication activities. Our 100+ members include alumina refiners and primary aluminium producers; downstream manufacturers of extruded, rolled and cast aluminium; aluminium recyclers and national aluminium associations, representing together more than 600 plants and 1 million (direct and indirect) jobs in 30 European countries. Aluminium products are used in a wide range of markets, including mobility, aerospace, transport, clean-tech, building and construction as well as packaging and consumer goods.