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Non-ferrous metals industry input to the upcoming Circular Economy Act

The metals ecosystem is pivotal to Europe's industrial base and plays a critical role in enabling the twin green and digital transitions. Non-ferrous metals from the base ones (aluminium, copper, lead, nickel, tin, zinc) through technology metals (e.g. cobalt, lithium, germanium, vanadium, gallium, bismuth) to precious metals (e.g. gold, silver, palladium, platinum, rhodium) form the foundation of high-tech and clean technologies, e-mobility and the green and digital transitions.

These strategic and critical materials are inherently circular. Unlike other materials, they can be infinitely recycled enabling significant resource efficiency gains. However, this circular potential remains underexploited due to insufficient waste collection, sorting and pre-processing, barriers to waste shipments, scrap leakage, and non-harmonised implementation of the EU waste rules in Member States.

Overall, to succeed in the EU Circular Economy, we must excel across the entire value chain, from securing access to secondary raw materials, through circular and sustainable product design, to creating a well-functioning EU single market for waste.

The upcoming Circular Economy Act must be coherent with a variety of existing EU rules on critical raw materials, batteries, ecodesign for sustainable products, waste shipments as well as future rules for end-of-life vehicles and e-waste, among others.

Our high-level recommendations:

- 1) **Raw materials access** – Secure access to metals (primary and secondary) needed for the green and digital transitions as well as defence.
- 2) **Product design**
 - Design sustainable and circular products across their full life cycle.
 - Abstain from applying recycled content targets for metals.
- 3) **EU Single Market for Waste**
 - Maximise waste collection, advance further waste treatment, sorting and pre-processing.
 - Harmonise waste classification across EU Member States to facilitate intra-EU shipments.
 - Streamline procedures for intra-EU waste shipments and facilitate import of waste to the EU.
 - Maintain the current intra-EU regime for green-listed e-waste shipments beyond 01/01/2027.
 - Prevent loss of valuable waste fractions from the EU¹.
- 4) **Industrial symbiosis** – Promote industrial symbiosis to integrate sectors for advancing circular economy and reducing waste.
- 5) **Regulatory alignment** – Streamline requirements across raw materials, chemicals, products and waste legislation, including the ongoing Environmental Omnibus.

¹ While acknowledging the existence of well-established international value chains, e.g. for platinum group metals.

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1. Raw materials access

Access to raw materials stands at the heart of Europe's industrial sovereignty and its ability to deliver on the twin green and digital transitions. The non-ferrous metals industry requires a reliable supply of strategic raw materials from both primary extraction and secondary sources.

The circularity potential of metals hinges on access to high-quality secondary raw materials. Yet, valuable metal-containing waste streams remain under-collected, misclassified, or are often leaving Europe under the false label of 'used goods' to be treated in sub-optimal environmental conditions in third countries². Building a strong business case for high-quality recycling in Europe starts with proper collection, sorting, and treatment.

Recycling infrastructure can only process what is collected. However, the recycling facilities operated by Eurometaux members have the capacity to process more. Full exploitation of Europe's 'urban mine', particularly e-waste and batteries, is essential to strengthen Europe's self-sufficiency in raw materials and to enhance supply from secondary sources.

At the same time, the EU must prevent the loss of valuable scrap and metal-containing waste streams to those third countries where environmental and safety standards are not equivalent to those applied in the EU and cost of related CO₂ emissions is non-existent. This is also in line with the objectives of the Critical Raw Materials Act of boosting EU domestic raw materials production from both primary and secondary sources and reaching the prescribed benchmarks. That being said, any rules regulating imports and exports must consider well-established international value chains and avoid setting a one-size-fits-all approach.

Our recommendations:

- Acknowledge that successful EU green and digital transitions depend on a reliable supply of raw materials from both primary and secondary sources.
- Acknowledge that a product's lifetime is one of the decisive factors determining when materials become available for recycling.
- Improve access to secondary raw materials by enhancing collection, sorting, and treatment of metal-containing waste.

2. Product design

2.1. Design for circularity and sustainability

The design phase of products is critical for determining how easily metals and critical raw materials can be recovered at the end-of-life. Sustainable and circular design is key from the perspective of product's full life cycle.

² As an example, around 3.5 million vehicles disappear without a trace from EU roads each year - and are exported, or disposed of illegally. Source: End-of-life vehicles Regulation - Environment - European Commission (https://environment.ec.europa.eu/topics/waste-and-recycling/end-life-vehicles/end-life-vehicles-regulation_en)



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At present, the Ecodesign for Sustainable Products Regulation (ESPR) sets the rules for all products put on the EU single market with a few exemptions, for example food, animal feed, and medicinal products. The ESPR as an overarching regulation seeks to boost circularity, improve sustainability and reduce environmental impact. However, there are already several product-specific EU regulations on products containing non-ferrous metals e.g. batteries, construction products, packaging, and soon end-of-life vehicles that should be followed. In these cases, the ESPR could only complement when the environmental sustainability dimensions cannot be fully and/or appropriately addressed via the existing, specific legislation.

New products put on the EU market will increasingly be accompanied by the Digital Product Passports (DPP). The DPP should facilitate the identification of critical raw materials (CRM) and give information on the components in which they are located in order to facilitate their identification and recovery.

Our recommendations:

- Product design rules should reflect full life cycle thinking and integrate recyclability and sustainability considerations from the design phase.
- Facilitate the identification of critical raw materials (CRM) in products and components to facilitate their recovery, e.g. via the Digital Product Passport.

2.2. Recycled content

Recycled content targets are being increasingly introduced across various EU products regulations. While they might be useful to address market failures in the secondary markets of some materials due to quality and/or price aspects, they are not recommended for metals.

Firstly, because metals can be recycled infinitely without loss of quality or performance. Secondly, because recycled metals meet the same technical standards as primary metals and thirdly because the market value of secondary and primary metal is the same. These aspects limit the additional environmental benefit that mandatory recycled content requirements might bring for our sector. Instead, there is a risk of unintended consequences, for example rerouting secondary materials from certain application(s) with no recycled content targets to favour other application(s) for which these targets have been prescribed. In addition, in case of insufficient EU sources, industry is forced to import secondary materials from outside the EU that might come with a significant CO₂ load going against the EU objectives to lower products environmental and carbon footprint.

This is a likely scenario under the EU Batteries Regulation which prescribes recycled content targets for four metals as from 2031, and for which adaptations might be necessary given the slower uptake of the EVs in the EU and limited domestic batteries production.

Considering regulatory coherence, it is important to remember that meeting recycled content targets depends on the availability of secondary materials. Careful consideration must be given to the relationship between mandatory recycled content requirements and strategies aimed at extending product lifespans. The lifetime of a product influences when its materials will return to the system and become available for recycling.

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Instead of applying mandatory recycled content targets for metals, future policy should focus on maximising the collection, sorting, and recycling efficiency of metal-containing waste. This approach will naturally create the right conditions for increased secondary metals use.

Our recommendations:

- Use recycled content mainly as a stimulus for those materials where secondary raw materials markets are not fully functioning yet.
- Abstain from applying recycled content for metals, including the critical raw materials (CRM) in electronic and electrical equipment (EEE).
- Focus on ensuring that metals-containing products are collected, sorted and recycled effectively using the best available techniques, at their end-of-life.

3. EU Single Market for Waste

To realise the full Circular Economy potential of metals, intra-EU waste flows to EU high-quality recyclers must be streamlined (optimised). Moreover, increased investment in the full recycling chain should take place, also considering new waste streams. Today, complex and inconsistent waste classification rules, combined with lengthy shipment procedures, hinder intra-EU circularity and create a competitive disadvantage for EU recyclers.

A well-functioning internal market for waste must be based on harmonised waste classification (e.g. hazardous or non-hazardous) and fast-track shipment procedures to pre-consented facilities. The green-listed waste shipment regime for e-waste under the Waste Shipment Regulation must be extended beyond 01/01/2027 and expanded to additional non-hazardous waste streams to facilitate efficient movement of waste containing CRM.

In accordance with the EU Waste Shipment Regulation, waste can be exported only when treated under standards and conditions equivalent to those uphold in the EU. Therefore, leakage of valuable metal waste to non-EU destinations with lower environmental standards must be stopped. At the same time, EU recyclers should be granted facilitated conditions to import waste containing CRM (e.g. end-of-life batteries, e-waste).

Additionally, the increased availability of low-carbon technologies reaching end-of-life (EV batteries, wind turbines, etc.) requires urgent scaling of EU recycling capacity to be ready to process new waste streams and to retain strategic metals in the EU and close material loops.

Our recommendations:

- Harmonise waste classifications across Member States and streamline intra-EU waste shipments to pre-consented facilities.
- Maintain green-listed shipment regime for e-waste beyond 01/01/2027 and expand to other strategic streams.
- Prevent loss of valuable waste fractions from the EU: e.g. e-waste, metal scrap, battery black mass.³

³ While acknowledging the existence of well-established international value chains, e.g. for platinum group metals.

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- Facilitate imports of recyclable waste into the EU to feed local, sustainable recycling industries.
- Support investments in high-quality recycling capacity for emerging waste streams from green technologies.

3.1. Collection, sorting and pre-processing of metal-containing waste

Metals are inherently circular and can be recycled again and again without losing their properties. Our state-of-the-art facilities can recover 25+ metals from complex metals-containing products once these end-of-life products reach their premises. However, insufficient collection is one of today's main barriers to a circular economy. E-waste, which contains a large number of critical raw materials and is one of the fastest-growing waste streams in terms of both volume and circularity focus, often remain in consumers' drawers or get lost in illegal channels along with all the valuable materials. Insufficient collection is also an issue for other CRM-rich end-of-life products, such as end-of-life vehicles that often go 'missing' but in fact are exported as 'used products' to third countries⁴.

Even if waste is adequately collected, the subsequent steps in the process might cause loss of materials if these are not properly sorted and pre-treated, including dismantling of the most valuable and rich in metals parts. For example, between 1.7 and 5.8 kg of copper is lost in steel scrap for every end-of-life vehicle that is recycled⁵. By improving the separation and quality of the different waste fractions during pre-processing, this loss can be substantially minimised. Furthermore, establishing quality requirements for output material fractions is an essential measure to ensure that recycled materials retain a specified level of quality.

Deposit return schemes or other reward-based programmes could be introduced as they have proven to be effective in increasing collection rates for bottles, cans and small electronics.

Our recommendations:

- Create awareness-raising campaign to educate consumers to properly dispose their waste so the urban mine potential can be exploited to the fullest.
- Advance further collection, sorting and pre-processing of metal-containing waste.
- Encourage mandatory dismantling of parts from end-of-life products (e.g. end-of-life vehicles) as well as detailed quality requirements.
- Introduce incentives or deposit return schemes to encourage consumers to contribute to a circular economy.

⁴ As an example, around 3.5 million vehicles disappear without a trace from EU roads each year - and are exported, or disposed of illegally. Source: End-of-life vehicles Regulation - Environment - European Commission (https://environment.ec.europa.eu/topics/waste-and-recycling/end-of-life-vehicles/end-of-life-vehicles-regulation_en)

⁵ <https://institut-mobilites-en-transition.org/en/publications/car-to-car-steel/>

3.2. Shipments of waste

Once properly collected, sorted, and pre-treated, waste is shipped to specialised treatment facilities. Because such facilities are not available in all Member States, waste is shipped across various Member States following the EU shipment procedures. However, intra-EU waste shipments remain burdensome for several reasons.

Firstly, there is a lack of harmonisation in the interpretation, implementation and transposition of existing waste legislation across Member States and even regions. For example, differing classifications of hazardous and non-hazardous waste, inconsistent recognition of waste versus by-products, and the use of national waste codes rather than uniform EU ones. Therefore, the Waste Shipment Regulation (WSR) should support recycling of CRM-rich waste and also be coordinated with the Critical Raw Materials Act (CRMA) for the exercise of green-listing waste under the WSR to boost Europe's raw material independence⁶.

Secondly, the number of pre-consented recovery facilities remains low, and their status is not automatically recognised across the EU. An automatic recognition of the pre-consented recovery facility status obtained in one Member State should be granted by the other Member States.

Thirdly, there are long waiting times to obtain or renew notification for waste shipment. On average, obtaining a new notification takes three to six months, and in some cases up to a year, while renewals typically require six months to one year, depending on the competent authorities. This incurs significant delays, as well as increased costs.

Additionally, financial guarantees remain high and vary significantly between Member States. Harmonisation of this issue would be extremely useful. Finally, the absence of a fully digitalised system for waste shipment documentation continues to add burden on recyclers who look forward to the e-waste system launch in May 2026.

Our recommendations:

- Expand green-listing of waste (Annex IIIB of the Waste Shipment Regulation) to those waste streams that contain CRM and that are shipped to EU pre-consented facilities.
- Allow automatic EU-wide recognition of the waste treatment pre-consented facility status once granted in one of the Member States.
- Introduce automatic approval (binding tacit consent) if a Member State Competent Authority doesn't provide response within the legal deadline (30 days) to a waste shipment notification submitted under the PIC (Prior Informed Consent) procedure.
- Harmonise the system for calculating financial guarantees for waste shipments across the whole EU.
- Introduce as soon as possible the e-system for waste shipments (DIWASS) to reduce admin burden for companies and to shorten waiting time for obtaining or renewing waste shipments notification procedure.

⁶ See Eurometaux response to green-listing of waste under the WSR to accelerate the transition to a Circular Economy (Oct. 2025). <https://www.eurometaux.eu/media/11slkadk/green-listing-of-waste--our-comments.pdf>

3.3. End-of-Waste criteria (EoW)

Our sector acknowledges the importance of having clear criteria under which waste ceases to be waste, and by-products are properly defined so that valuable non-ferrous metals can re-enter the economy. However, the practice shows that the official EU end-of-waste criteria prescribed for aluminium and copper scrap are not uniformly used across the EU Member States and the procedure to apply them differs from self-declaration only to an official decision by the Member State competent authority.

Too much freedom in EoW implementation creates favourable conditions for their misuse. As a result, high-quality recycling facilities receive in reality poor-quality metal scrap classified as EoW. Additionally, 'falsely' applied EoW status is also a circumvention path to export waste under a framework that has significantly fewer control steps than those under the shipment of waste. The EoW rules cannot be used to facilitate exports of aluminium or copper scrap outside Europe.

Such practices weaken the EU Circular Economy and hinder the Union's ability to meet the recycling benchmark established under the CRM Act.

Our recommendations:

- Streamline the procedure to apply the existing official EU EoW criteria across the Member States and make it stricter to avoid circumvention or misuse of the EoW status.
- Ensure enforcement across the Member States to avoid export of 'mis-labelled' EoW.

3.4. Leakage of waste

Leakage of metal-containing waste from the EU, particularly through illegal exports and non-compliant waste shipments, undermines Europe's goals of boosting recycling and securing domestic access to critical raw materials (CRMs). Such losses weaken the circular economy, reduce significantly availability of waste for EU high-quality recyclers⁷, and pose serious risk to human health and environment if carried in sub-standard conditions.

To address this, the EU should increase enforcement and traceability through stricter customs checks, digital tracking, and stronger penalties that outweigh the gains from illegal shipments. Improved coordination and information sharing between Member States, plus higher number of well-trained customs officers would be a good starting point.

In addition, mandatory agreements between waste collection points and authorised treatment facilities could also prevent leakage of waste. A robust and harmonised monitoring framework is vital to ensure that valuable waste stays within Europe's recycling system. For aluminium, for example, introducing export fees on aluminium scrap is a necessary and effective tool to retain this valuable resource within Europe. It would help channel more scrap for sorting and remelting in European recycling facilities.⁸

⁷ Recycling of metals is a multistep process which relies on efficient collection and sorting, pretreatment of scrap metal; further processing such as melting of scrap and casting into a shape. To drive high-quality recycling well-sorted input material (e.g. metal scrap) is needed which can be recycled in as many loops as possible with minimal losses while maintaining its inherent and desired properties.

⁸ https://european-aluminium.eu/wp-content/uploads/2025/06/25-08-28-European-Aluminium_Scrap-export-fees.pdf

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At the same time, given the global and interconnected nature of our markets, a “one-fits-all” approach should be avoided, and targeted approaches based on the characteristics of the materials and their supply chains are necessary.

Our recommendations:

- Introduce more frequent and stricter customs checks at the EU borders to prevent illegal shipments to extra-EU countries.
- Implement additional measures to prevent metal scrap or battery black mass leakage from the EU.
- Introduce agreements between waste collection points and European authorised treatment facilities.

4. Industrial symbiosis

Due to the multi-metal nature of raw materials for metal production, industrial symbiosis is embedded in the non-ferrous industry business model. As a result, metals producers and recyclers are organised in a complex and highly integrated network of different operators.

The main target is to create additional economic value by recovering all valuable metals contained in natural ores and secondary raw materials, and to reduce the quantity of waste for final disposal. Producers sell their residues and by-products to specialised companies to enable extraction of additional valuable metals from a range of sources and concentrations. For example, clean copper cable scrap is approximately 99% pure copper, but e-waste has a copper content which ranges between 4 to 20%. Increasingly complex primary metal ores and concentrates are leading to more complex by-products and intermediates. These contain more minor constituents in higher concentrations. Another example (primary metal production) are copper, nickel, cobalt, cadmium, and precious metals-containing leach residues, a by-product in primary zinc production which is sent to copper smelters for copper- and other metals recovery. Large volumes of zinc-containing flue dust are produced in steel production and recycling. This hazardous waste is recycled for its zinc content in the zinc industry.

Industrial symbiosis is the best way to valorise by-products, like iron silicate, and connect these streams into other sectors (e.g. construction) so that materials are kept in the loop to save natural resources, lower CO₂ emissions and prevent landfilling. It is essential to preserve the activities of companies operating through industrial symbiosis for a successful circular economy. If these networks cease operating, large volumes of waste would no longer be recycled but instead landfilled or exported, resulting in the loss of valuable metals for Europe.

One of Europe's leading examples of industrial symbiosis is the Kokkola Industrial Park (KIP) in Finland, where circular economy principles have evolved since the 1960s, initially driven by practical needs and cost-efficiency. The companies within KIP operate in a tightly integrated system, with multiple closed-loop synergies based on the exchange of materials, energy, and resources.

Also, the Flanders Metal Valley in Belgium is a unique network of metal producers and supporting industries which forms a pioneering region in innovative metals production and recycling. It is hosting major players like Umicore, Aurubis, Nyrstar, and others. These companies form a unique industrial ecosystem that recovers over 20 different metals through advanced technologies and close collaboration from various waste streams like: copper, tin or lead scrap, zinc dust, e-waste, spent catalyst, fuel cells or industrial restudies.

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Our recommendation:

- Promote industrial symbiosis by encouraging sector integration and rewarding synergies that advance circular, climate-neutral economy and reduce waste.

5. Coherence of EU Legislation

The effectiveness of metals circularity policy also depends on the coherence between the EU's various regulatory frameworks across the raw materials, chemicals, product and waste legislation. Misalignments between these frameworks can hinder investment, compliance, and circular business models.

The upcoming Circular Economy Act should build a coherent framework and act as a bridge across the various EU regulations like the Critical Raw Materials Act with its benchmarks, the Ecodesign for Sustainable Products, the Batteries Regulation, the Waste Framework Directive, the Waste Shipment Regulation and the chemicals legislation including REACH, CLP and RoHS. It also needs to be fully in line with the objectives pursued by the current revision of the End-of-Life Vehicles Directive and the future revision of the Waste Electrical and Electronic Equipment Directive. Additionally, the proposal of so-called Environmental Omnibus represents further opportunity to reduce administrative burden while enhancing environmental performance.

A systemic, cross-cutting policy approach is essential to deliver strategic and circular metals value chains in Europe.

Our recommendations:

- Ensure coherence and mutual reinforcement across raw materials, chemicals, product, and waste legislation.
- Advance simplification efforts (e.g. Environmental Omnibus) to reduce regulatory complexity for circular business models.

5.1. Chemicals, products and waste interface

A lot of non-ferrous metals or metal compounds, including those used in low carbon applications, have classifiable hazards of some type. Risk management measures exist and are in place to control emissions and exposure and hence avoiding the occurrence of effects associated with these hazardous properties. The presence and use of such substances does not mean 'harm' *per se*.

The use of these metals and metal compounds is necessary to achieve the technical performance expected by the market and they cannot be substituted (see paragraph above). Their risk management is controlled by compliance with the REACH Regulation (EC) 1907/2006, occupational safety and health (OSH) legislations and/or sector-specific environmental/product legislation. This network of legislations helps to identify where exposure/emissions may occur and address those to ensure they do not pose an unacceptable risk to human health or the environment.

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For example, a battery is a sealed unit, designed to prevent the release of substances during proper use. At the end of its life, recycling operations are conducted by permitted facilities operating under controlled conditions in accordance with EU and national legislation to ensure both workers safety and environmental protection.

Our recommendations:

- Avoid restrictions and limitations based solely on the hazard classification of a substance and take into account risk control measures and related EU legislation.
- Align requirements across the materials/chemicals, products and waste legislation to support (rather than hinder) Circular Economy by promoting safe recycling of hazardous substances.

5.2. Recycling of complex waste and emissions

Recycling has the potential to lower the metals industry's overall carbon footprint on a lifecycle basis, as recycling of high-quality metallic scrap require less energy than extraction and primary production operations. However, it is also true that recycling of some metals from by-products and complex waste fractions can result in higher CO₂ emissions and energy requirement, due to the presence of plastics and other organic materials, as well as lower metal concentrations and/or small volumes or due to their oxidized form in by-products such as dusts, slags, and leach residues.

As an example, the recycling of e-waste is a complex process which involves pre-processing (dismantling, shredding), followed by smelting and refining, which are needed to allow the recovery of copper and other valuable metals. Non-metallic components, such as plastics and other organic materials remain mixed with the metal fractions, leading to unavoidable process emissions. Currently, there are technical limitations in reducing the carbon footprint in this process, which might subject the production of refined metals from recycled material to high carbon costs, in stark contrast with the objective of a stronger circular economy.

The regulatory framework should facilitate rather than disincentivise recycling of complex waste. For instance, EU ETS should acknowledge the life-cycle benefits of recovering those valuable materials, that are very often critical, as a necessary step to keep and scale up recycling within the EU. Moreover, careful consideration should be given to the uncertainties around the revision of EU ETS product and fallback benchmarks, and about how CCS, CCU will be treated, combined with the high cost of removal technologies, risk deterring investment in recycling infrastructure and innovation.

Our recommendation:

- Ensure that the EU ETS acknowledges the life-cycle benefits of converting complex waste streams (e.g. e-waste) into valuable materials to keep and scale up recycling within the EU.

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About Eurometaux: Eurometaux is the voice of non-ferrous metals producers and recyclers in Europe. We are an umbrella association representing our sector towards EU policy makers.