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Mining Raw Materials in a Competitive Circular Economy: Unlock the potential!

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Context

Starting in the mine, the whole raw materials value chain is fundamental to boosting EU decarbonization, strategic autonomy, security, resilience, and competitiveness, and it should be achieved while upholding the EU's high environmental and social standards. In this context, the European Commission is currently working on unlocking competitiveness while maintaining its ambitious standards through its simplification initiative and the accompanying series of Omnibus packages.

Raw materials contribute to the circularity with their inherent properties; metals can, in many cases, be infinitely recycled, enabling significant resource efficiency gains. Recycling and material recovery technologies play a crucial role in recapturing valuable elements like aluminium, copper, or rare earth metals, which can be reintroduced into the production cycle without loss of quality. Industrial symbiosis, where the waste or by-products of one process become the raw materials for another, is the basis for circular thinking.

However, this circular potential remains underexploited due to legal obstacles, inconsistencies, and overlaps in the environmental regulation that block mining permits, misleading messages to reduce the extraction of primary raw materials to promote secondary raw materials, barriers to waste shipments, scrap leakage, and non-harmonised implementation of the EU waste rules in Member States.

We are confident that this New Circular Economy Act (CEA) will complement these efforts on simplification, acting as an Omnibus to solve substantial obstacles in the raw materials sector from mining to recycling.

Circular Economy and Primary Raw Materials

While consolidating the currently fragmented foundations of a European circular society, the EU is striving to increase the share of secondary raw materials produced and used. In parallel, it is essential to recall the rising needs and skyrocketing demand for essential primary raw materials, especially linked to defense, green and digital transition: until 2050, zinc demand will increase by 47%, copper and lead both by 77%, and nickel by 109% (Wood Mackenzie) – to cite only a few. Therefore, the EU's sustainable market will necessitate a smart primary and secondary raw materials mix, which complements rather than substitutes each other.

EU's raw materials supply and circularity start upstream with responsibly sourced extraction and processing of raw materials. The amount of secondary raw materials will not be sufficient

to meet the expected demand, either in volume or on time. Both for having raw materials to recycle and reuse, and to meet a growing absolute demand. Primary raw materials remain an essential source for high-tech and new technologies and to meet the growing demand for our transforming infrastructure to a decarbonised society. This urban stock will become in several decades the new source for secondary raw materials.

The EU mining sector, while already a global frontrunner in terms of sustainable practices, is committed to enhance its contribution to the EU Circular Economy and sustainable competitiveness. However, there are many regulatory pitfalls on the way, and the CEA has the potential to unclog the process.

Circular practices in the mining sector: potential vs bottlenecks

Potential and bottlenecks in developing circularity practices can be recognized at various levels, from the reuse of extractive waste to the reprocessing of minerals.

- Mining operators are notably undertaking and exploring the reuse of extractive waste, which can take different forms: reprocessing raw materials from tailings and extractive waste facilities, use of primary production waste streams, and further processing of critical raw materials as by-products from primary production, and repurposing (e.g., as construction material, reclamation abrasives, or other industrial uses). The reprocessing of mining waste depends on various factors. One main issue is **economic viability**. If the economic context is favourable and an adequate technique is available, extractive waste may become a deposit, and re-processing may be planned, designed, and carried out. Other hurdles in reprocessing are linked to **uncertain liabilities** (blurred lines between mining waste producer and reprocessing operator), and **unclear classification of waste.**

- **Recycling of primary raw materials does not necessarily have less environmental impact**. It could imply higher energy and water consumption due to low metal concentrations and/or small volume, resulting in cross-media effects such as process emissions. The regulatory framework impacting the recycling of mining waste should not disincentivise it.

- **Inconsistencies and overlaps between EU legislation provisions**, **particularly with environmental regulation, are currently preventing and delaying permits**, creating uncertainty and unpredictability for investors. Misalignments between these frameworks can hinder investment, compliance, and circular business models. Therefore, existing legal obstacles in environmental legislation must be addressed, and this is equally important for the production of secondary and primary raw materials. As an example, the Water Framework Directive and its principles of non-deterioration and "one-out-all-out" are legal obstacles to permits for all sorts of production.

- While directly feeding into the circular ambitions of the EU (lowering CO emissions, increasing use of secondary raw materials, reducing landfilled industrial waste, conserving primary resources), repurposing practices are heavily hindered by a **fragmented and strict approach to end-of-waste criteria** on EU territory (e.g., metallurgical slags with waste criteria), which increases administrative burden and deters investment in circular technologies.

- It is noteworthy that **none of the challenges that arise relate to the Extractive Waste Directive nor the BREF on the Management of Waste of Extractive Industries (MWEI BREF).** These frameworks are fit for purpose, well-tailored to the sector's diverse local characteristics and needs in a transitioning society. They enable predictability and adaptation to local conditions through a smart risk-based approach.

- The reprocessing of minerals as secondary raw materials, necessary to reach the EU's circularity ambitions, encounters issues related to the **fragmented EU waste shipment rules**, hindering cross-border transport of recyclable materials, and a too **restricted green listing of waste**, which leads to a higher administrative burden, incompatible with approval systems among Member States, and little route adjustment potential.

Policy recommendations

1. Extraction of primary sustainable raw materials is strategically important and required, and should not be reduced

The world's growing demand for raw materials proves that recycling is an important but a smaller part of the supply solution, and it is very far from being able to cover alone the needs of a competitive economy. It is necessary to combine an active recycling of raw materials with increased extraction of primary raw materials to achieve a green and digital transition. The European Union must foster primary extraction, alongside efforts to enhance recycling systems and processes, and avoid putting primary and secondary production against each other. Future recycling depends on the primary production, smart design of products, and retention of the scrap within EU borders.

2. EU policy coherence and harmony

The CEA is an opportunity to eliminate bottlenecks that are slowing down the development of circular practices. To ensure predictability and scaling up of EU sustainable raw materials production, the CEA should be consistent with other key EU policies.

⇨ No additional resource consumption targets

The Critical Raw Materials Act (CRMA) aims to source at least 10% of the EU's annual critical raw material needs from domestic extraction by 2030, and 25% secondary material use by 2030. These objectives are already on their way, and adopting new

resource consumption targets could risk hindering the process. The CEA should rather **focus on enabling the fulfilment of the CRMA targets**.

- ⇨ **Remove legal obstacles in the environmental regulation** that block permitting for primary and secondary raw materials projects.

- ⇨ **Facilitate and streamline the permitting of circular activities**
  The CEA should facilitate permit procedures for activities such as the reprocessing of extractive waste.

- ⇨ **Clarify liabilities**
  To enhance legal certainty and foster new projects, the CEA must clarify the liability regime for the reprocessing of extractive waste.

- ⇨ **Eliminate bottlenecks by harmonizing and clarifying EU waste legislation**
  EU waste legislation needs to be harmonized and clarified to improve the cross-border movement of materials and regulatory certainty. The CEA should clarify the classification of waste, harmonize and expand the end-of-waste criteria, and streamline the EU waste shipment rules to shorten procedures, decrease the amount of documentation and transaction costs. This will eliminate procedural bottlenecks and unlock the financing of circular activities and innovations.

3. No one size fits all

The CEA must take sectoral specificities into account. Pieces of legislation such as the Management of Waste from the Extractive Industries (MWEI) Directive and the MWEI BREF are already fit for purpose and do not require amendment. The MWEI Directive requires operators of extractive waste facilities to obtain permits and develop waste management plans that demonstrate waste prevention, minimisation, recovery, and safe disposal. It also encourages the recovery of extractive waste by means of recycling, reusing, or reclaiming such waste. At the same time, the MWEI BREF already identifies Best Available Techniques conclusions (BATC) to prevent, reduce, and recover extractive waste.

The introduction of recycling quotas could be detrimental, instead of facilitating circularity in a sustainable, competitive EU. For instance, primary and secondary metals are often blended in metallurgical processes and result in identical products; setting quotas is both technically impractical and economically burdensome.

4. Make recycling a business case

Finally, the CEA should focus on facilitating the financing of circular activities. The production of secondary raw materials is usually most costly, making it unprofitable. This could be achieved by the use of public procurement and encouraging investment in recycling technologies.

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