

The EU circular economy and hazardous substances

Perspective of the metals industry

Key Messages

- Metals provide unique functionalities that are essential to building a more resource efficient and low carbon future. Many products and articles may contain hazardous metals and metal compounds which are integral to the required functionality. The production and use of such substances in these products are strictly regulated (chemicals, workplace, environmental, products legislation) and do not pose risks to either humans or the environment.
- Recycling metals makes sense from an environmental perspective, but it is also essential to secure their cost-efficient supply and availability. Metals are the perfect example of material that can be recycled again and again without impacting its intrinsic properties.
- Because they are naturally occurring and present, a metal free environment is by nature impossible. Hazardous metals and metal compounds will continue entering the metals production/recycling cycles both through their primary sources, and through the end of life recycling of products which contain them.
- A sheer ban of hazardous substances would decrease the amount of waste recycled in Europe, and be an incentive to landfill, export valuable materials to non-EU countries and import more materials and products from non-EU countries.

Recommendations

- End-of life products containing hazardous substances should be properly treated i.e. in respect of the legislation on place and against quality criteria. Legislation should be effective, smart and proportionate. It should not discourage unnecessary the use of secondary sources, especially within the context of the EU Circular Economy and global competition. Overlapping or incoherent legislation should be avoided.
- For example, when a risk is limited to the workplace (e.g. recycling facility), workplace-specific legislation may be the most effective and proportionate risk management option (RMO). Adding Candidate Listing and REACH Authorisation will not improve workers' protection; it may instead hinder recycling activities.
- Level playing field conditions need to be established for the recovery of valuable materials from waste and by-products, so as to secure a sound risk management and avoid penalizing EU recyclers, while importing goods with less guarantee of proper treatment.
- The benefits of substitution should always compare alternatives on an equal footing, and be assessed on a comprehensive life-cycle basis and taking account of potential burden shifts and regrettable substitution (health and environment). Socio-economic and technical aspects, including availability, reliability as well as fitness for use (performance of the final product) should also be considered before and when regulating the use of hazardous substances.
- The control of product quality and safety, and environmental risk, should be ensured at product policy level, e.g. through eco-design, and be enforced through effective controls of goods produced in Europe and imported.

Metals along the value chain - Managing the risks

Many of the metals which are essential to a given functionality (products) or to a given process have hazardous properties (e.g. lead is used as carrier to refine other metals). The usage of these hazardous substances is highly regulated to guarantee safe extraction, use and recycling. The metals industry is deploying all necessary measures to ensure that the risk is duly controlled.

Extraction

- Ores that are mined from the ground contain several metals in various forms, some of which have hazardous properties. Hazardous forms of metals will therefore continue entering the material loop through primary sources. Existing legislation and best practices ensure safe extraction and handling of the metals from the ground.
- Primary and secondary materials are fully complementary to meet the growing demand for metals in support of sustainable economic development.

Products and articles

- Metals provide unique functionalities that are essential to building a more resource efficient and low carbon future. Many products and articles may contain hazardous metals and metal compounds which are integral to the required functionality. The production and use of such substances in these products are strictly regulated (chemicals, workplace, environmental, products legislation) and do not pose any risk to either humans or the environment.
- Metals containing products are already subjected to substitution assessment through specific legislation such as the Battery Directive or the RoHS (Restriction of Hazardous Substances) Directive. These legislation specifies the conditions under which the hazardous metal can be present and used safely in such articles or products (e.g. through concentration limits).

End-of-life products and recycling

- When products reach the end of their life, they are collected and become secondary sources of valuable materials that can be recycled into new metals or alloys. Metals can be recycled again and again without losing their properties.
- However, the metals industry faces different challenges in accessing these secondary materials (e.g. illegal shipments, lack of level playing field, lack of optimal collection schemes, landfilling and incineration of recyclable products, etc.).
- Hazardous substances embedded in end-of-life products can be destroyed, transformed and/or recovered through the recycling metallurgical process, which has long been regulated through different pieces of legislation aiming at preventing, controlling and abating possible emissions (environmental and workplace legislation).
- Imposing a hazard-based sorting approach prior to metals recycling would therefore be meaningless for both economic and environmental reasons. Recycling these components of the secondary materials can replace energy needs, and the metallurgical process may often offer the best solution to manage these hazardous substances (vs landfilling or incineration for example).

Substitution and ban of substances

Substitution can be technically or economically driven and in some cases may be accompanied by a regulatory ban on a certain substance. There are different types of substitution: at material level, at product/article level, at process level (technology). In the framework of the circular economy, some call for banning or substituting hazardous materials to reduce their (legacy) presence in material loops and recycled materials. However, in the context of metals recycling, it is important to note that:

- Substituting the use of given metals in products is complex and currently almost impossible as metals have unique properties which support given functionalities. As new metals cannot be invented/created substitution is often done by using another metal.
- Banning the presence of substances with hazardous properties in the production/recycling cycles of metals is difficult to implement, if not impossible at all, because the hazardous substances will keep

entering the material loop both through the primary sources of metals, and through the end of life products which contain hazardous substances, and are recycled. The potential risk associated with the occurrence of hazardous metals in production and recycling facilities is well controlled by facilities meeting EU legislative requirements.

- The benefits of substitution should always compare alternatives on an equal footing, and be assessed on a comprehensive life-cycle basis and taking account of potential burden shifts and regrettable substitution (health and environment). Socio-economic and technical aspects, including availability, reliability as well as fitness for use (performance of the final product) should also be considered before and when regulating the use of hazardous substances.

REACH Authorisation

- Applying a strictly hazard-based Authorisation process to substances commonly present in metal production/recycling processes would trigger disproportionate requirements, likely to incentivise recycling companies to cherry-pick or refuse waste and by-products containing hazardous substances, even if they are coupled with important valuable metals that could be recovered.
- The measure would in turn decrease the amount of waste recycled in Europe, but also the amount of valuable material supplied from secondary production and most likely trigger an increase of (illegal) disposal and landfill, and (illegal) shipment of valuable materials outside of the EU.