Position of EU Recyclers

on Ecodesing for Sustainable Products Regulation (ESPR)

The case of metals

17 April 2023

**Introduction**

Metals are the backbone of clean energy infrastructure and technologies, but their mining and processing generates significant carbon emissions (CO2), posing a significant burden to our terrestrial sphere. Mining activities – of ores and concentrates - have been repeatedly associated with loss of biodiversity, soil erosion and contamination of surface water, groundwater and soil. It is also noteworthy to mention that in many countries, mining companies are expected to adhere to rehabilitation and ensure that the area mined is eventually transformed back into its original state. However, violations of such rules are quite common.

**Increased future demand**

The production of base metals in a sustainable manner is now more important than ever, especially since their demand is forecasted to increase at an exponential rate, in the coming decades. [A study carried out by KU Leuven (2022)](https://eurometaux.eu/media/jmxf2qm0/metals-for-clean-energy.pdf), shows that this is particularly the case of metal such as aluminium, copper, nickel, cobalt for which the expected demand is expected to reach 18Mt, 5Mt and 0.6Mt respectively by 2030 (**Figure 1-4**). Regarding steel, demand in 2021 grew by a staggering 15% from the 2020 levels (132.2 Mt).The associated emission from the production of the above-mentioned metals is equivalent to 18t CO2/ton for aluminium, 4.8t CO2/ton for copper, 18t to 70 CO2/t for nickel and 38t CO2/t on average for cobalt ([Worldsteel Association, 2023](https://worldsteel.org/steel-topics/statistics/world-steel-in-figures-2022/" \l "world-crude-steel-production-1950-to-2021)).

Greening the production processes could, therefore, significantly contribute to the ambitious but necessary targets of the [EU Green Deal](https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1588580774040&uri=CELEX:52019DC0640) and [new Circular Economy Action Plan](https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN) (CEAP). This is also linked and connected with the recently announced [Fit for 55 package](https://www.consilium.europa.eu/en/policies/green-deal/fit-for-55-the-eu-plan-for-a-green-transition/#what) which refers to the EU’s target of reducing net greenhouse gas emissions by at least 55% by 2030, which in turn will contribute to making the EU climate neutral by 2050.

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**Figure 2.** Copper European total demand by domestic clean energy technology production (KU Leuven)

**Figure 1.** Aluminium European total demand by domestic clean energy technology production (KU Leuven)

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**Figure 4.** Cobalt European total demand by domestic clean energy technology production (KU Leuven)

**Figure 3.** Nickel European total demand by domestic clean energy technology production (KU Leuven)

**Scope**

EuRIC strongly welcomes the scope and conclusions presented by the JRC is its [preliminary study on the product priorities](https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/635/documents) with regards to the prioritisation of the intermediate product group. More precisely, EuRIC supports the shortlisted products of the above-mentioned group, which was based on environmental, market and policy considerations and agrees with the score attributed to iron and steel (31), non-ferrous metal products (27) and aluminium (26). This undoubtedly shows that they have high impact and improvement potential in many environmental areas (e.g., water, air, waste, climate change and energy use etc.,).

**Circularity requirements**

Metals are a central element to achieve the EU’s goals, as they are endlessly recyclable, and metals coming from recycling do not face downcycling or quality related issues. Their continuous introduction into new lifecycles help to secure Europe’s access to metals which is considered to be a key building block for a competitive and sustainable EU economy. In that regard, EuRIC would like to express its strong support on the list of potential measures identified and in particular on the ones related to:

* **Minimum recycled content per unit/tonne of product:** Although EuRIC is fully in line with this measure, it is of the opinion that at least for the steel and iron intermediate product group more specific targets are necessary for a strong legislative framework. Therefore, considering that for 2021 the production of crude steel and use of steel scrap in the EU was equivalent to [152.6Mt](https://worldsteel.org/steel-topics/statistics/world-steel-in-figures-2022/) and 107.4Mt, respectively, it can be deduced that a feasible recycled content target could be between 60% and 70%.
* **Information requirements on the percentage of recycled content per ton of input material:** A simple comparison between the input and output material could be used to show compliance with the minimum recycled content targets.
* **Maximum energy consumed during manufacturing:** To produce steel, facilities use one of two processes: the basic oxygen furnace (BOF) or the electric arc furnace (EAF). With the first path - alternatively also known as ‘iron ore to steel route’, hot metal is mostly produced from iron oxide ores in blast furnaces, and more rarely in smelting reduction plants, and is processed to make crude steel in oxygen converters. Sponge iron produced from iron ore in direct reduction plants is converted to crude steel in electric arc furnaces. With the second path – alternatively also known as the ‘scrap-based route’, scrap is used as base feedstock.

It is known that to meet the increasing demand of steel in the EU – due to population growth and the transition to renewable energy – both processes are needed. However, taking into consideration the efforts the EU is making to move towards a circular and climate-neutral economy, it is clear that more research and financial support is needed in the area of optimising the use of scrap (e.g., more investments directed into increasing EAF steelmaking etc.,).

Furthermore, significant energy savings are also encountered in the production of non-ferrous metals using scrap. For example, recycling aluminium and copper save 95% and 85%, respectively, of the energy needed for primary production.

For more information about metal recycling: [EuRIC Metal Recycling Fact Sheet](https://www.bing.com/ck/a?!&&p=36ec87b79324c9b7JmltdHM9MTY3ODMyMDAwMCZpZ3VpZD0wZWZkZjVmMi1hOWNiLTZiNmYtMGVmZC1lN2YwYWRjYjY1MDkmaW5zaWQ9NTE3MQ&ptn=3&hsh=3&fclid=0efdf5f2-a9cb-6b6f-0efd-e7f0adcb6509&psq=EuRIC+Metal+Recycling+Fact+Sheet&u=a1aHR0cHM6Ly9ldXJpYy1haXNibC5ldS9yZXNvdXJjZS1odWIvcmVwb3J0cy1zdHVkaWVzL21ldGFsLXJlY3ljbGluZy1mYWN0c2hlZXQ&ntb=1)

**Contribution to strategic autonomy**

[Critical raw materials](https://ec.europa.eu/growth/sectors/raw-materials/areas-specific-interest/critical-raw-materials_en) (CRMs) are crucial for producing a broad range of goods and technologies. The transition towards digital, highly energy-efficient and climate-neutral European economies will lead to a significantly higher demand for CRMs. For this reason, it is extremely important for the EU to reduce its dependency on the import of those materials. In that regard, EuRIC is pleased to see that in terms of strategic autonomy iron and steel received the maximum score (5), followed by non-ferrous metal products (4) and aluminium (3). This confirms the fact that recycling measures will be especially important in emerging economies as greater amounts of steel and non-ferrous metal-containing products begin to reach the end of their lifetimes. Therefore, although EuRIC is aware that this is not the primary objective of the ESPR, it would like to state that an increased output from recycling facilities will require proper collection and avoiding that products containing metals enter illegal streams at the end of life.

The ferrous and non-ferrous metals recycling Branches of EuRIC look forward to work on enhancing the circularity of iron and steel, non-ferrous metal products and aluminium as part of the first Ecodesign for Sustainable Products Regulation working plan.

**Policy coherence**

Considering that this Regulation provides for the setting of ecodesign requirements for a large range of products, it is of the utmost importance to ensure coherence in terms of the requirements set under the ESPR and other product specific legislation. To help to prevent confusion EuRIC believes that for the intermediate products steel, non-ferrous metal products and aluminium ecodesign requirements should be set at the product specific legislation – when it of course exists.