

## END-OF-WASTE CRITERIA FOR COPPER AND COPPER ALLOY SCRAP

THE EUROPEAN COPPER INSTITUTE (ECI) EXPECTS THAT THE NEW END-OF-WASTE CRITERIA FOR COPPER SCRAP WILL BOOST COPPER RECYCLING IN EUROPE.

### BACKGROUND

The Commission Regulation (EU) No 715/2013 of 25<sup>th</sup> July 2013, which establishes criteria determining when copper scrap ceases to be waste, will come into effect on January 1<sup>st</sup> 2014.

Following the adoption of criteria for scrap iron, steel and aluminium (March 2011) and glass cullet (December 2012), this is the third waste stream addressed by the European Commission.

The criteria were drawn up by the European Commission's Joint Research Centre (the EU's scientific and technical research laboratory) after consultation with Member States, ECI, Eurometaux and representatives of scrap dealers/traders.

### REQUIREMENTS FOR COPPER AND COPPER ALLOY SCRAP TO CEASE TO BE WASTE

The main criterion for copper and copper alloy scrap, to exit the waste regime, is that the content of foreign material is below 2% by weight. The material must also not contain excessive metal oxides, radioactive contaminants, or combustible materials and must be free from visible oil and oily emulsions.

The 2% limit has been advocated by ECI since such high quality scrap can be recycled directly (through simple re-melting) by the producers of semi-fabricated copper products. Lower grade scrap, with a foreign material content above 2%, is a waste that needs to be recycled further upstream in the value chain (at the metal producing step, typically referred to as smelting and refining).

Materials assembled from collecting, sorting and pre-processing operations, which meet these technical requirements, and therefore cease to be waste, are subject to the existing legislation and standards applicable to substances (e.g. REACH). To achieve end-of-waste status, the material should also not be considered hazardous in accordance with various European regulations on waste and persistent organic pollutants (POPs).

The end-of-waste regulation also includes requirements for copper and copper alloy scrap to be separately collected and sorted from other waste streams. Wastes that cannot be used include filings and turnings containing fluids (e.g. oil and oil emulsions).

Other requirements relate to shipment and transport. A certificate of conformity will need to be provided for shipments of copper scrap, leaving a sorting and pre-processing plant, to show that they merit end-of-waste status. This will require improvements in quality management systems, along the collecting, sorting, and pre-processing part of the value chain, to demonstrate compliance with the regulation. Shipments can then be introduced into the most appropriate part of the metal recycling chain, i.e. to smelter/refiners or to semi-fabricated product manufacturers, in order to maximise recovery yields.

The regulation allows for a review of the criteria following a period of monitoring and impact assessment.

---

## FACTS AND FIGURES

In the early 2000's, net copper scrap trade flows, into and out of the EU27, were close to balanced. In just ten years, the EU has become a major net exporter. The International Copper Study Group estimated that, in 2011, a net 900,000 tonnes of valuable copper scrap were exported out of the EU.

Recycling is an increasingly important part of the supply chain for any naturally occurring material. It increases resource efficiency, saves energy, safeguards local jobs and saves on landfill. Because of copper's intrinsic value, it also incentivises the recycling of end-of-life products, such as electric and electronic components. According to the International Copper Study Group, 41.5% of the copper used in Europe (2.1 million tonnes) in 2011 came from recycling.

---

## THE RECYCLING VALUE CHAIN

Efficient recycling requires close stakeholder interactions along a complex and diverse value chain. While somewhat simplistic, the process can be broken down into three separate steps - collection, pre-treatment and material recovery.

1. The metals in products that have reached their "end-of-life" are collected by thousands of micro, small and medium-sized companies, municipal waste authorities and consumer take-back schemes.
2. Metal scrap undergoes a variety of pre-treatment operations (dismantling, sorting, shredding, grouping by category, etc.) according to the quality requirements of the final recyclers.
3. Waste and scrap materials are gifted with another life through complex refining processes that recover pure metals again.

The first two steps (collection through to pre-treatment) usually take place close to the scrap source and require less capital compared to the final step (material recovery). The complexity of today's products, increased even further through miniaturisation, requires metal recovery to be multi-metallic by nature as well as sophisticated technologies to maximise recovery yields, as well as protect the environment and worker health.

This results in the number of players involved, in the production and material recovery of metals, being very small compared to the multitude of collectors, traders and pre-treatment processors (tens compared to thousands). ECI represents the industrial copper producers and those who finally recover the metal.

---

## REFERENCES

The European Copper Institute is a joint venture between the world's leading mining companies, custom smelters and semi-fabricators (represented by the International Copper Association, Ltd) and the European copper industry. ECI is also part of the Copper Alliance, an international network of industry associations, whose common mission is to defend and grow markets for copper, based on its superior technical performance and contribution to a higher quality of life. [www.copperalliance.eu/policy](http://www.copperalliance.eu/policy)

COMMISSION REGULATION (EU) No 715/2013 of 25 July 2013 establishing criteria determining when copper scrap ceases to be waste under Directive 2008/98/EC of the European Parliament and of the Council, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:201:0014:0020:EN:PDF>

End-of-waste Criteria for Copper and Copper Alloy Scrap, L. Muchova, P. Eder and A. Villanueva, JRC 2011, <http://ftp.jrc.es/EURdoc/JRC64207.pdf>

[International Copper Study Group \(ICSG\), Annual Recyclables Survey \(2003-2011\), April 2013](#)