

Green Copper - Sustainable Copper from Brixlegg

Sustainable copper for tomorrow's economy

Copper cathodes with certain maximum impurity levels are also registered and traded on the London Metal Exchange. High-quality copper is characterized by low impurity levels, as even the smallest amounts of selenium, bismuth or antimony can strongly influence conductivity. Copper is a very important material for the energy transition and is used extensively for renewable technologies such as solar cells and electric vehicles. However, copper also has a significant carbon footprint. One of the most important materials in the copper supply chain is the copper cathode, which has a purity level of 99.95%.

Copper cathode production usually involves two major steps that contribute to its carbon intensity: mining copper ore and processing it into copper cathodes. Then, the copper cathode is prefabricated into products such as rods, sheets, and wires, which are further processed into finished products. There are two main types of copper ores in the earth's crust: copper oxide ores and copper sulfide ores. Copper sulfide ores are the most common source of copper, where copper occurs in compounds with iron and sulfur. The ore usually also contains traces of valuable metals such as gold and silver. The copper concentration in the ore is usually only about 0.5% to 2%, depending on where it is mined. The lower the copper concentration, the more processing is required, which increases carbon intensity. Emissions are mainly caused by the combustion of diesel in mining equipment such as excavators and trucks.

The quality of copper ore declines over time as priority is given to mining higher grade ore. However, there is a solution to the problem: copper recycling or copper upcycling from Brixlegg by Montanwerke Brixlegg AG. Copper can be recycled an infinite number of times without any loss of quality. Secondary copper, which is produced from recycled scrap, already accounts for 40% of today's copper production. The carbon intensity of secondary copper production can vary widely, requiring up to 90% less energy than primary copper production. To meet the demand for (sustainable copper/green copper) products, with the lowest carbon footprint produced from 100% recycled raw materials as well as with 100% renewable energy, is needed from Brixlegg.

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