

Commission consultation on an Industrial Carbon Management Strategy

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Copper is an essential raw material for decarbonisation

Copper is an essential raw material for the energy transition. Given its superior electrical and thermal conductivity, copper is used in most technologies required for decarbonisation. The European Commission has defined copper as a strategic raw material in the proposed Critical Raw Materials Act, acknowledging that copper is indispensable for achieving the EU's objective of a carbon-neutral economy.

With the increasing demand for wind farms, solar PV, heat pumps, electric vehicles and other net zero technologies, **EU copper demand is forecast to increase by 35 percent by 2050¹**. Copper extraction, processing, and recycling also allows to produce or recycle many other non-ferrous metals that are important for the transition.

To strengthen the EU's strategic autonomy in critical raw materials and reduce its current dependency on certain third countries, **it is crucial that EU policies support the green transformation of strategic industries such as copper**. Copper producers are subject to fierce international competition and are effectively price-takers on global commodity markets where copper is traded. This means they cannot pass on to their customers one-sided costs such as the cost of deploying carbon capture, use and storage (CCUS).

CCUS is required to tackle a small share of hard-to-abate process emissions from copper production in the EU

The European Copper Institute (ECI) supports the EU's climate ambitions for 2030 and 2050.

Ambitious policies are needed to increase electrification, the deployment of renewables and energy efficiency to decarbonise the European economy and reduce dependency on Russian fossil fuels. Climate action must build on a fast decarbonisation of the electricity grid, combined with energy efficiency in all sectors and electrification whenever possible. While electrification, the deployment of renewables and energy efficiency measures remain the most important levers for decarbonising the EU economy, the deployment of CCUS currently presents the only solution for bringing the emissions of some industrial sectors to net zero.

Copper producers in the EU have already made important efforts to reduce their GHG emissions, notably through shifting to flash smelting furnaces, installing renewable energy generation on site and implementing energy efficiency measures in the mining and processing of copper. This resulted in a reduction of approximately one third in the carbon intensity of refined copper over the period 1990-2018¹.

The copper producers that the European Copper Institute represents in Europe² have committed to a goal of reducing the scope 1 and 2 GHG emissions of their copper production to net zero by 2050.

This commitment is based on a robust and pragmatic analysis of how the GHG emissions of copper production can be abated. The conclusions of this analysis are set out in our decarbonisation roadmap "*Copper - the Pathway to Net Zero, Regional focus: Europe*"³ which sets out a trajectory for reducing GHG emissions from copper mining, smelting, refining and recycling in Europe based on an analysis of current decarbonisation technologies, their cost, availability at scale, and abatement potential.

Provided that key enabling conditions, such as access to competitively priced decarbonised electricity, are fulfilled, it is possible to reduce the scope 1 and 2 GHG emissions of copper production in Europe by 30-40

¹ KULeuven, Metals for Clean Energy: Pathways to solving Europe's raw materials challenge, 2022.

² ECI represents approximately 85 percent of the copper production capacity in the EU, based on the International Copper Study Group's 2021 directory of mines and plants.

³ <https://copperalliance.org/resource/copper-pathway-to-net-zero-europe/>

percent by 2030, by 85-95 percent by 2040 and by 90-95 percent by 2050⁴ by using current technologies (electrification, alternative fuels, decarbonized electricity, energy efficiency).

CCUS technologies are amongst the innovations that can allow the copper industry to tackle the last 5-10 percent of CO₂ emissions that are the most difficult to abate, in order to reach a full reduction of Scope 1 and 2 emissions by 2050. **For copper smelters in regions where copper ore has a higher carbon content than the average, CCS/CCU is the only way to reduce process emissions that result from the thermal processing of copper ores during copper production**, as it is not possible to fully eliminate these emissions within the production process.

EU action is required to overcome legal and cost barriers to the deployment of CCUS

The operation of CCUS entails significant capital and operating costs, which makes it inaccessible for most industry operators today. Financial incentives are needed to enable the use of CCUS in sectors where it presents the only way to abate (a part of) CO₂ emissions. The further development of CCUS technologies to increase their cost-efficiency should also be supported. Other obstacles come from the fragmented legal framework in the EU, where not all member states currently allow underground storage of CO₂; as well as public awareness and acceptance of CCUS.

The European Copper Institute welcomes the initiative of the Commission to develop an EU strategy on Industrial carbon management which can help overcome some of these obstacles and accelerate the deployment of carbon capture, storage and transport infrastructure in the EU.

Our key recommendations for future policy or legislative action on CCUS are to:

1. **Ensure there is a legal basis** enabling the underground storage of CO₂ in all EU member states.
2. Install a support scheme providing **financial compensation for each tonne of CO₂ that is captured and/or stored**.
3. **Raise public awareness** about how CCUS operates and its importance for fighting climate change.

About the European Copper Institute

The European Copper Institute (ECI) is the leading advocate for the copper industry in Europe and the European arm of the International Copper Association (ICA). Our members mine, smelt, refine and recycle copper for use across the economy, in the electricity system, buildings, transport and industry.

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⁴ These percentage reductions are in comparison to a no-action scenario. For more detail, refer to *Copper—The Pathway to net zero, Regional focus: Europe*, available on <https://copperalliance.org/resource/copper-pathway-to-net-zero-europe/>