European Copper Institute
Copper Alliance

Revision of the Renewable Energy Directive

European Copper Institute position

February 2022

The European Copper Institute (ECI) supports the EU's climate ambitions for 2030 and 2050 and welcomes the proposed revision of the Renewable Energy Directive (RED II) as a step in the right direction to accelerate the deployment of renewables in buildings, heating and cooling, transport and industry. Copper makes a significant net contribution to the clean energy transition as a sustainable raw material that is needed in multiple renewable energy technologies.

In particular, the new provisions related to **buildings, district heating and e-mobility** are important and should be maintained in order to accelerate the deployment of renewables in these sectors, mainly through electrification.

Copper producers are working hard to further reduce their carbon footprint by improving energy efficiency and reducing emissions. Decarbonising copper production is a huge challenge and it is therefore important that the Fit for 55 package and the REDII revision put in place the right framework to support the copper industry in these efforts during the coming decade. In this regard, ECI welcomes the recognition of the use of waste heat in industrial processes as an eligible measure to mainstream renewable energy in heating and cooling under the revised article 23. **To support copper producers' efforts to utilise waste heat, we ask for Article 23(4) to be extended to also cover the conversion of excess heat to electricity for self-consumption as an eligible action.**

Provisions setting targets for buildings and district heating & facilitating system integration of renewable electricity should be maintained

ECI welcomes the Commission proposal to amend REDII as a step in the right direction to accelerate the deployment of renewables in buildings, heating and cooling, transport and industry. The provisions related to buildings, district heating and e-mobility, in particular, are important to accelerate the deployment of renewables in these sectors through electrification.

The concrete targets for **buildings and district heating** (articles 15a(1), 15a(2) and 24(4)) should be maintained to deliver on the high improvement potential in these sectors, notably through electrification (heat pumps).

Equally, the new article 20a to facilitate system integration of renewable electricity should be maintained. In particular, the provisions mandating **access to information of batteries** for battery owners and users (article 20a(2)), **smart charging** functionalities for publicly accessible recharging points (article 20a(3)) and **non-discriminatory access to the electricity markets** (article 20a(4)) are important to support the fast development of e-mobility at the lowest cost and allow the implementation of an open market for smart charging and grid interaction. Ultimately, this will benefit consumers through lower electricity prices.

Conversion of waste heat to electricity for self-consumption should be recognised as an eligible measure for mainstreaming renewables

Copper producers are working hard to further reduce their carbon footprint by improving energy efficiency and reducing emissions. Decarbonising copper production is a huge challenge that will require massive investments in the development and deployment of innovative production processes and solutions. It is therefore important that the Fit for 55 package in general and the REDII revision in particular put the right framework in place to support the copper industry in these efforts during the coming decade.

In this regard, ECI welcomes the proposed provisions to facilitate the uptake of long-term renewables power purchase agreements, as well as the recognition under the revised article 23 (paragraphs 4b and 4f) of the use of waste heat in industrial processes as an eligible measure to mainstream renewable energy in heating and cooling. **To support copper producers' efforts to utilise waste heat, Article 23(4) should also cover the conversion of excess heat to electricity for self-consumption.**

The production of primary copper involves exothermal reactions that generate waste heat. In some cases, such excess heat can be directed to third parties, typically feeding a district heating network.

However, in many cases **copper production facilities are in locations far from heat sinks** such as other industries or district heating networks. In such cases, the best way to valorise excess heat is its conversion to electricity for immediate self-consumption, given the electro-intensive nature of copper production processes. **This allows to significantly improve the efficiency of the process, saving primary and final energy**.

We therefore ask for article 23 paragraph 4b to be reformulated to explicitly include the conversion of excess heat to electricity for self-consumption as an eligible measure. We believe

that this is fully in line with the spirit of article 23 paragraph 4 to incentivise the recovery of heat flows that would otherwise be lost without producing a useful effect. Whether heat is used as such or is converted to equivalent forms of energy should not make a difference.

This basic principle is also supported by Article 24 paragraph 4 of the recast Energy Efficiency Directive on heating and cooling supply, where the principles for the cost benefit analysis to be carried out to assess the potential to increase efficiency of new and refurbished installations are explained. The principles for carrying out this assessment in Annex X state that *"in case of waste heat recovery on-site, at least the use of heat exchangers, heat pumps, and heat to power technologies shall be assessed."*

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Copper makes a significant net contribution to the clean energy transition

Copper is a necessary raw material for decarbonisation technologies

More copper is needed for the clean energy transition. Thanks to its excellent electrical and thermal conductivity, copper delivers energy savings and CO_2 reductions across the electricity system, in transport, buildings and industry. Copper is used in applications such as windmills, power grids, electrical installations, solar panels, electric vehicles, charging infrastructure, building automation, energy storage, solar thermal, wastewater heat recovery, heat pumps and batteries. Overall, **copper-enabled decarbonising technologies can abate approximately 75% of the EU GHG emissions[1].**

The additional copper demand generated by the energy transition is compatible with the move towards a circular economy. Copper can be recycled endlessly without loss of properties and around 50% of copper produced in the EU today is obtained through recycling. Copper also contributes to resource efficiency as a carrier metal and by-products of copper production include other metals needed for the energy transition, such as nickel.

The copper industry is committed to reducing its carbon footprint

The copper industry has significantly decreased the per-unit energy consumption of copper through improvements such as flash smelting, use of oxygen, energy management and excess heat recovery. Copper producers are working to further reduce their carbon footprint for instance through increasing electrification and the use of renewable energy. The use of electric trucks and machinery, battery energy storage as well as hydrogen are also being explored. As an industry we are putting together a decarbonisation roadmap to 2050.

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.

Contact

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[1] Copper estimate based on the EU 2050 "High-RES" scenario of the EU 2050 energy roadmap, plus additional assumptions about the uptake of emerging technologies.
https://ec.europa.eu/energy/sites/ener/files/documents/2012_energy_roadmap_2050_en_0.pdf
GHG estimate based on DecarbEurope. https://decarbeurope.org/