The European Copper Industry's

# MANIFESTO

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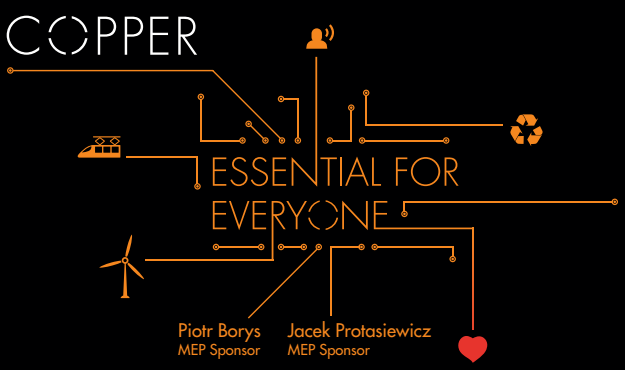

# Benefits of a Competitive European Copper Industry

Copper and its many alloys are characterised by their 100% recyclability, their superior technical properties, such as high electrical and thermal conductivity, their ability to be easily processed, and their durability. As a result, copper stands at the centre of many of the technologies that will drive Europe's future competitiveness.

Copper has a significant positive impact on climate change mitigation, by improving energy efficiency, lowering energy demand and enabling renewable technologies. The EU's 20/20/20 energy targets cannot be met without an increased use of copper products. As one example, electric motors consume about 60% of industrial electricity demand. Full implementation of the Minimum Energy Performance Standards for electric motors (published in OJ L 191/26) will require a typical 50% increase in the copper content in the motor windings. This will deliver electricity savings of 135 TWh/year (more than the combined annual electricity consumption of Finland and Greece) and will avoid 63 million tonnes/year of $CO_2$ emissions. As another example, if every EU citizen used 1 $m^2$ of solar thermal capacity to generate hot water, it would save 80 million tonnes/year of $CO_2$ emissions.

The vision of a lower carbon transportation system, delivered by affordable, hybrid and electric vehicles, connected to smart grids, along with high-speed rail networks, requires copper. A hybrid passenger car contains 50 kg of copper for the electric motor, energy storage and transfer system. Each high-speed train requires 10 tonnes of copper components, plus 10 tonnes in the power and communication cables per kilometre of track. Low carbon electricity sources, such as renewables, and the distributed electricity systems required to incorporate and manage them, need four to ten times the copper content of electricity produced via centralised, fossil fuel generation.

The copper industry is continuing to invest in innovative technologies to improve the environmental and economic performance, as well as the resource efficiency, of its products. Copper's role in computer chips and information technology equipment has helped to realise the digital age. A highly visible example of resource efficiency is the impact that very thin, high-performance copper alloys have had on the miniaturisation of everyday items such as mobile phones, computers, cameras and portable music devices.

A more recent innovation is the opportunity to exploit copper's natural antimicrobial properties in touch surfaces. Independent hospital trials in the UK, US and Chile have demonstrated a greater than 90% reduction of total micro-organisms on the copper components compared to the control items. In the US trial, neither MRSA nor VRE were found on any of the copper surfaces. Leading medical practitioners now believe that antimicrobial copper may well offer an important additional measure to combat the 4 million cases of healthcare-associated infections, resulting in 37,000 deaths, which currently occur each year across the EU.

One overarching benefit is copper's ability to be recycled, again and again, without any loss in performance. 40% of the EU's 2008 copper demand, of 4.6 million tonnes, was met through the recycling of end-of-life products and offcuts from the downstream value chain. This makes copper one of the most sustainable natural resources. With recycling using only 20% of the energy needed for primary production, this reduced the EU's 2008 $CO_2$ emissions by 650,000 tonnes.

Driven by its social responsibility, market forces and EU policies, the copper industry has also invested heavily in improving its own energy consumption, in reducing its environmental emissions and in process technologies to recycle increasingly complex end-of-life products, such as electric and electronic scrap. All these advances are well documented in the BREF notes (Best Available Technology) under the Integrated Pollution and Prevention Control (IPPC) Directive. The EU now has the cleanest and most energy efficient copper smelters in the world. Despite 30% of current energy consumption being used for environmental protection (e.g. air filters and wastewater treatment), since 1995, the energy consumption per tonne of production has decreased by 54%. In addition, sulphur dioxide emissions are only 8% of the rest of the world average.

However, in order to maintain its ability to deliver these products and to fund continued EU innovation, the European copper industry must operate in a regulatory environment that allows it to remain competitive. A key challenge is that metal prices are set globally, on commodity exchanges, whereas operational costs are local. The inability to pass through the higher costs associated with labour, environmental protection and the impact of the 3rd phase of the Emissions Trading Scheme (ETS), places EU companies at a clear disadvantage.

The regulatory environment required in Europe is one that provides a level-playing field with other world regions, particularly those where copper's benefits are now playing a critical role in economic growth. Approximately 50% of Europe's copper demand in 2008 was supplied through imports. Without a strong industrial policy for Europe, this percentage will increase, carbon leakage will occur and recycling will be carried out in countries with lower recovery rates and poorer human health and environmental standards.

In line with the May 2009 European Council conclusions, the European copper industry believes that the EU should strive to achieve a regulatory framework that balances both high levels of sustainability and a competitive environment for industry to innovate, to grow, and to sustain employment. In the European copper industry, 50,000 skilled employees support this position. Millions, who work in the automotive, utilities, transportation, construction, and information technology sectors, depend on competitive, European-produced copper components and products. And, the 500 million citizens living in the EU who will gain from the many economic and societal benefits associated with copper containing products and applications.

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## Principles required to balance EU policy objectives and competitiveness

### ⊙ Keep Europe globally competitive on energy and climate change policy

Until a global climate deal can be concluded, in which all key nations introduce similar targets in the same time frame, the copper industry cannot afford unilateral measures that result in higher costs without providing adequate compensation. Without, under the ETS, free of charge allowances for direct $CO_2$ emissions and adequate compensation for indirect $CO_2$ emission costs, the industry will be unable to compete with regions outside of the EU and the copper Europe needs will be produced elsewhere. This production shift will almost certainly result in higher energy consumption, have a negative global environmental impact and reduce EU employment. In addition, energy prices in Europe are currently amongst the highest in the world. A pan-European energy network, and a true internal market for energy, would encourage competition and help lower prices for consumers and industry.

### ⊙ Ensure fair access to the raw materials required for copper production

With the EU dependent on imports to meet 50% of its copper demand, the European Commission must support fair access to both primary and secondary raw materials. For primary materials (ores and concentrates), a more level playing field on environmental and energy costs will enable European producers to compete better on the world market, which the International Copper Study Group forecasts to grow at 4% per year. For secondary materials (scrap), this requires the expansion of collection schemes across Europe, unambiguous end-of-waste criteria, and more rigorous enforcement of the EU waste shipment regulation. In both cases, a level playing field must also be sought on trade terms for the purchase of copper raw materials. These terms are increasingly distorted by export restrictions and import subsidies that provide certain producers with a purchasing advantage on the international market.

### ⊙ Expand the use of life cycle methodologies in impact assessments

The production of copper requires energy. On average, one tonne of primary copper results in a one-time emission of 3 tonnes of $CO_2$. However, copper is infinitely recyclable, with recycling using only 20% of the energy for primary production. Studies, carried out under the EU Energy Using Products Directive, also highlight that 95% of the environmental and economic impact occurs during the use phase. The same one tonne of copper, used appropriately in an electricity-consuming component, such as a motor which has a typical service life of 20 years, will save 200 tonnes of $CO_2$ each year. Both of these facts must be taken into account in impact assessments.

## Support innovation through R&D funding and public procurement

Public procurement and eco-labelling schemes should support continued innovation in downstream copper-based applications that deliver resource and energy efficiency. Schemes need to reflect appropriate life time operating costs, not only up-front price. Broader consideration should be given to co-finance fundamental research on upstream processes that will further reduce energy consumption and increase the recovery of all metals in scrap recycling. This could lead to a strengthening of the EU's environmental technology sector, deliver huge energy savings from the public sector, and reduce Europe's dependence on imports.

## Link environmental legislation to core policies, such as REACH and IPPC

The European copper industry recognises its obligations to comply with an increasingly complex legislative framework, e.g. REACH, Classification & Labelling, Water Framework Directive, IPPC, ETS, Waste Regime and Sustainable Production and Consumption. In preparation for REACH, the industry has recently spent 8 million € on a comprehensive scientific study to evaluate potential risks for humans and the environment from the manufacture and use of copper products. In 2009, after extensive review, the Commission and Member States approved the risk assessment dossier and its key conclusions. These are that "Copper is an essential nutrient for humans, as well as living organisms, and that the use of copper is, in general, safe for Europe's environment and the health of its citizens". Despite this approval, some EU and Member State legislative and standards setting bodies use other data and analyses, which typically result in additional burdens on the industry and its products. The European copper industry requests that the benefits of deviating from the IPPC BAT, risk assessment conclusions and REACH standards are demonstrated, through balanced, scientific and economic analysis, before any such standards are set.

Today, the **European copper industry** is an **innovative** and **sustainable** industry. It is committed to working with the EU institutions on advancing the above principles to ensure that both the needs of Europe and the competitiveness of the industry are met for the benefit of future generations.

**About the European Copper Institute:**

The European Copper Institute (ECI) 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. Its mission is to promote copper's benefits to modern society across Europe through its headquarters in Brussels and its network of eleven national Copper Development Associations.

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