

Transposition of the EC "Eco-Design" directive on 11 August 2007

## **New requirements for consumer goods: copper to the fore in the "eco-design" revolution**

**From 11 August 2007**, the date for transposition of EC directive 2005/32/EC (known as "the eco-design directive") in Member states, manufacturers will have to review the design of the most energy-hungry mass-market equipment and consumer goods, in order to limit their environmental impact. Because it is durable, 100% recyclable, and - by virtue of its high conductivity - extremely energy-efficient, copper is set to play a crucial role in this revolution.

### **The eco-design of mass-market consumer goods - a hidden energy reserve**

Listening to 15 CDs, preparing 20 microwave meals or watching TV for 4 evenings: each of these activities uses 1 kWh of electricity<sup>1</sup>. The lifestyle of Europeans and the efficiency of the goods they use in everyday life have a major effect on energy consumption and on the pressure exerted on the environment. Consumption of final energy within the EU rose by 12.6% between 1990 and 2004<sup>2</sup>, with domestic use accounting for 26% of energy consumption, and constituting the main source of this increase (+3.9% in 2004).

### **Directive targets the most energy-hungry products**

Directive 2005/32/EC establishes a general framework, which will allow requirements to be fixed so that the environmental performance of products "offering a high potential for cost-effective reduction of greenhouse gas emissions" can be improved. This new approach, which takes into consideration the environmental impact of products throughout their lifecycle, is called "eco-design".

**From 11 August 2007**, the deadline for transposition of the directive in Member states, the Commission is poised to introduce a set of implementing measures aimed at the most energy-hungry product categories, such as transformers, refrigerators, lighting systems, boilers, dishwashers, computers, etc. In future, manufacturers will have to meet a rigorous set of specifications, across a whole series of criteria, including product life, energy consumption, generation of waste and the possibilities for reuse/recycling.



### **More copper means greater energy efficiency and less CO<sub>2</sub>**



Most products in today's society, including refrigerators, coffee machines, ovens, computers, and chargers, could not function without copper, which constitutes between 1% and 20% by weight of electrical and electronic equipment. It is the best electrical conductor of all the non-precious metals, and therefore increasing the amount of copper in these applications improves performance and reduces energy losses during use. This is especially true of what are known as "high efficiency" motors, which include 30% more copper than average, and achieve 30% lower losses, leading to greater efficiency. Thus, for every additional kilogram of copper used in a copper rotor, CO<sub>2</sub> emissions are reduced by 3,674 kg/year.

On a large scale, the environmental benefits are significant. According to Professor Ronnie Belmans, President of the International Electricity Union, "the judicious use of 1 million tonnes of copper in the energy sector makes it possible to reduce CO<sub>2</sub> emissions by 20 million tonnes per year."

Use of the "red metal" also increases the durability and recyclability of mass-market equipment and consumer goods, because copper itself is both durable (lasting anything from a few years to several centuries, depending on the application) and 100% recyclable. The efficiency of the copper recycling industry means that exploitation of natural resources upstream of product manufacture can be limited, and the volume of waste produced downstream can be reduced: currently, 41% of the copper used in Europe is produced by recycling<sup>3</sup>.

With its exceptional performance across the 3 main criteria targeted by the eco-design process (energy efficiency, durability, recyclability), copper is therefore set to play a crucial role in this revolution.

### **High-definition images and a list of the products targeted by the EC directive available on request**

#### ***About the European Copper Institute:***

The *European Copper Institute* (ECI) is a joint venture between the world's mining companies (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 a network of eleven copper information centres.

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<sup>1</sup> Calculations based on the electrical system used in Great Britain i.e. 473 g CO<sub>2</sub> / kWh (source: *Leonardo Energy Program*, 2006).

<sup>2</sup> Source: inventory report by the European Environment Agency (EEA, June 2007).

<sup>3</sup> Source: *International Copper Study Group*, Lisbon.