



Press pack:
European Copper Institute



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1 - What is ECI?

A joint venture between the world's mining companies and the European copper industry

Founded in 1996, the European Copper Institute is a non-profit professional organisation representing the world's mining companies (through the International Copper Association, Ltd.) and the European copper industry. Via its Brussels based regional office and its network of eleven Copper Development Associations, its mission is to communicate copper's essentiality for health, technology and quality of life.

Its roles:

- For its members and professionals: monitoring of European policies and regulations; market intelligence and advice relating to end uses and products; public affairs towards key stakeholders; implementation of European programmes aimed at enhancing innovation in fields such as electrical power quality, energy efficiency, renewables, transportation and human health.
- For the general public: information campaigns on the different properties and applications of copper in important fields such as construction, transportation and energy, as well as on copper's recyclability and sustainability.

A key platform for the media

ECI has set up a web based information platform, aimed specifically at journalists, offering up to date information on the copper market, including live copper prices, supply/demand data and annual figures from the recycling sector. It also provides detailed press kits and a picture library on copper's main applications.

ECI's Annual Report, plus a quarterly newsletter aimed at opinion leaders, policy and decision-makers, is also available. To subscribe, [click here](#).

www.eurocopper.org

An important resource for the media, general public and decision-makers

ECI's www.eurocopper.org website serves as a central reference for copper - its history, its essential properties and its broad range of applications and markets.

The site hosts a press room and picture library designed to meet the needs of the media.

The general public can discover various facts about the red metal in sections covering end use applications, market data, technology, health and environment and education.

Economic stakeholders and professionals will find ECI's latest Annual Report, studies conducted with its partners, along with live data from the copper market.

The site also provides links to more technical information for professionals throughout the copper value chain.

The screenshot shows the European Copper Institute website. At the top, there is a navigation bar with links for 'HOME', 'ABOUT ECI', 'APPLICATIONS', 'TECHNOLOGY', 'MARKET', 'HEALTH & ENVIRONMENT', 'MEDIA', 'EDUCATION', and 'CONTACT US'. A search bar is located in the top right. Below the navigation bar, the main content area features a 'Welcome to the European Copper Institute' section with a brief description of the organization. To the right, there is a 'LATEST NEWS' section with several news items dated from March to June 2008. Below the welcome section, there are two featured articles with images: 'Copper for sustainable homes' and 'Copper, the new weapon against hospital superbugs'. A 'Copper Cash in €' line graph is also visible. At the bottom, there is a 'Key Applications' section with icons for Communications, Architecture, Electricity & Energy, Plumbing & Heating, Rational use of Energy, Renewable Energy, and Transport. A subscription form for the newsletter is located in the bottom right corner.

The site, available in five languages, offers a dynamic and comprehensive overview of the many benefits that copper brings to modern society.

Interviews with ECI's Chief Executive and Communications Manager



3 questions for John Schonenberger Chief Executive

"ECI's strength is that it represents the entire copper sector"

What makes ECI the voice of the copper industry?

One of ECI's greatest strengths is that it represents the entire copper sector, from extraction, through metal production, the manufacture of semi-finished products, and finally to end of life recycling. In addition to its regional office in Brussels, ECI is supported by its European network of 11 Copper Development Associations.

What do you consider to be its key role?

Most copper products are hidden, e.g. inside equipment, buildings, means of transportation and communication systems. ECI's key role is to ensure that there is widespread understanding and recognition of the contribution made by copper products, both in terms of their intensity of use versus competing materials, and in the impact that copper can make in helping the EU achieve its goals in areas such as competitiveness and sustainability.

What are the main European dossiers in which ECI is currently involved?

Our top three priorities are, firstly, to ensure that the benefits of electrical energy efficiency are highlighted within EU policies on climate change and energy supply security. Secondly, that the competitiveness of the EU copper recycling and refining sector is not damaged by CO₂ emission taxes. And, thirdly, that the science generated by ECI's Copper Risk Assessment is properly taken into account in the setting of the EU's new quality standards for water, soils and sediments.



3 questions for Christian de Barrin Communications Manager

"Copper plays a key role in modern society"

What is copper's role in today's economy?

The use of copper has been growing continuously for over a century. According to the *International Copper Study Group*, global refined demand has increased steadily from 0.5 million tonnes in 1900 to more than 18 million tonnes in 2007. Copper's key role in the development of a modern, economic society can easily be understood by the fact that every one million \$ of GDP growth requires 500 kg of copper.

What are the key attributes that drive demand for the red metal?

Out of the metals used in everyday life, copper is the best electrical and thermal conductor. This property makes it essential in electricity production, distribution and use, from both conventional and renewable energy sources. Equipment manufacturers, architects and designers also value copper for its malleability, resistance to corrosion, durability and aesthetic qualities.

How does copper help provide high sustainability benefits in construction?

Copper plays an important role in the entire life cycle of a building and its contents, from design, through use, to end of life recycling. Extremely durable and 100% recyclable, copper products help to improve energy efficiency in electricity distribution and in appliances. It can also be found at the heart of renewable energies such as solar, geothermal and photovoltaics. Lastly, since copper is naturally antimicrobial, it improves the safety and hygiene of water distribution and air ventilation systems.

2 - What does ECI do?

ECI's main areas of activity include:



Electricity and Energy

Gathering market intelligence to develop and disseminate educational and advocacy messages on subjects such as electrical energy efficiency, the quality of electrical energy, and the safety and convenience of using electricity in our homes and places of work.



Construction

Promoting the sustainability and durability benefits of using copper in architecture (roofs, façades), in renewable solar thermal systems and in water, gas and heating pipework.



Transportation

Promoting copper's technical advantages across a broad spectrum of transportation mechanisms. Copper is widely used in aeroplanes, cars, trucks and high-speed trains (e.g. electric motors, radiators, hybrid technologies).



Sustainable Development

Gathering and reporting peer reviewed data on recycling rates and life cycle inventory data, increasingly required by design engineers and specifiers.



Health & Environment

Contributing to research programmes aimed at increasing the understanding of the potential effects of copper on human health and the environment. Sound science developed, e.g. as part of the industry's copper risk assessment, is being used in the setting of future EU regulations.

ECI proactively supports numerous research programmes. As examples:

Clinical trial at Selly Oak Hospital, Birmingham

Copper in the fight against nosocomial infections

Each year in the United Kingdom, 300,000 nosocomial infections are contracted in hospital. Nearly 5,000 patients die from their illness, according to a report from the *National Audit Office*¹. While not all nosocomial infections can be prevented, they could however be reduced by 15% through the improved sterilisation of hospitals.

Pure, or in alloy form, copper is a powerful antimicrobial agent. A 2006 laboratory study showed that 10 million methicillin-resistant staphylococcus aureus (MRSA) placed on a copper surface are eliminated in 1½ hours².

As a result of these findings, ECI is supporting a clinical trial, launched in late 2007, at Birmingham's Selly Oak Hospital. The aim is to evaluate copper's ability to reduce surface contamination in a ward environment and so help to prevent the spread of infection. Frequently touched surfaces, such as door handles, taps, soap dispensers, bathroom grab rails, over-bed tables and toilet seats have been replaced with copper-based items.



A sampling and testing program, under well defined protocols, is underway to observe the effects on microbial levels. The study will permit the evaluation of whether, and to what extent, the presence of copper may ultimately reduce the risk of cross-contamination between patients.

¹ *The Management and Control of Hospital Acquired Infections in Acute NHS Trusts in England*, National Audit Office, 2000.

² Noyce JO, Michels H, Keevil CW. *Potential use of copper surfaces to reduce survival of epidemic methicillin-resistant Staphylococcus aureus in the healthcare environment*. *Journal of Hospital Infection* (2006) 63 ; 289.

Leonardo ENERGY programme

The global community for sustainable energy professionals

Leonardo
ENERGY

Leonardo ENERGY is a broad industry/academic partnership led by ECI. Its remit is to provide a credible, authoritative resource and information centre for all professionals involved directly or indirectly in the electrical energy sector - researchers, designers, engineers, entrepreneurs, architects, decision-makers and journalists. Through different projects, including its Power Quality Initiative, 150 academic and industrial partners are involved in the *Leonardo ENERGY* programme.

The www.leonardo-energy.org website offers a broad range of educational material and market intelligence reports, plus a fully-fledged virtual library. Visitors can also benefit from easy access to complementary articles, reports, summary notes and discussion forums. Click ([here](#)) to subscribe to the different distribution lists allowing you to receive regular tailored information.



Germany's InHaus research & innovation platform

Cutting-edge research on the dwelling of the future

ECI has joined forces with the Fraunhofer Institute's research laboratories to explore the potential uses for copper in the home of tomorrow.

A prototype of the "InHaus 1" house, located in Duisburg, offers practical experimentation on research in the field of housing (new technologies, reduction of environmental impact, etc). It should soon explore the antimicrobial qualities of copper for domestic uses, such as door handles.



A second building, under construction, will showcase innovation in domestic technologies. InHaus 2 will be devoted to research on the communal buildings of tomorrow (hospitals, homes for the elderly, offices and hotels) and will enable numerous applications to be tested. One section will present the latest advances in adapting the dwelling to the specific needs of the elderly and the disabled. Global interactive systems for support and emergencies will be experimented with and developed. These bona fide "service technologies" will include fall and straying detectors, device malfunction detectors, medication aids, etc.



FEEDS - Forum for European Electrical Domestic Safety

Broad partnership champions the improvement of electrical safety in the home

ECI led the set up of a partnership amongst five key international organisations active in promoting safety in the electricity sector. The partnership involving Europacable, the Electrical Installers Association, the European Electricity Union and FISUEL, a certification body, is focused on improving the quality of electrical installations by advocating for a regulatory framework to encourage, and ultimately mandate, periodic inspection and renovation.



In Europe, 60% of dwellings are over 30 years old. It is estimated that nearly 90 million homes do not conform to basic electrical safety standards. Their installations are not capable of safely delivering current power levels, and also frequently include dangerous habits, such as plugging multiple devices into a single socket, running extension leads under carpets, keeping electrical equipment close to water sources, haphazard DIY... These days, safety levels in the majority of fields are continually tightening and those concerning domestic electrical installations should be no exception. Ensuring the safety of occupants in a rapidly ageing building stock across Europe is an important challenge that must be addressed.

3 - The ECI team

The organisation is made up of 11 EU nationals. Its offices are located in the heart of Brussels, close to the headquarters of the European Commission and Parliament.

John Schonenberger

Chief Executive



Christian de Barrin

Communications Manager



Catherine Mantell

Finance & Accounting Supervisor



Nigel Cotton

Automotive, Building Construction Programme Manager



Hans De Keulenaer

Electricity & Energy Programme Manager



European Copper Institute

Katrien Delbeke

Environment Manager



Valérie Vandroost

Assistant to the Programme Managers



Sergio Ferreira

Electricity & Energy Project Manager



Katia Lacasse

Project Manager Environmental Programme

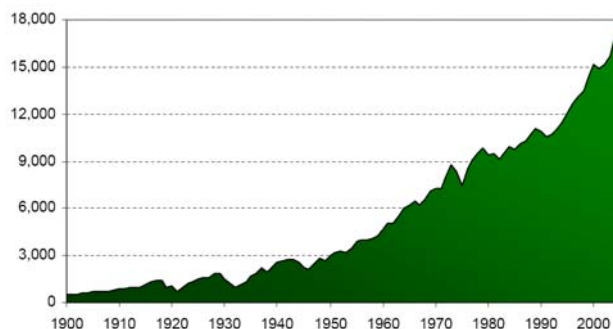


4 - The copper market

The copper industry³

The red metal is an essential resource in both the developed and developing economies.

During the 20th century, global demand for refined copper grew continuously, from 500 thousand tonnes in 1900 to more than 18 million tonnes in 2007. Since the 1990's, the average annual growth rate has been 4%.



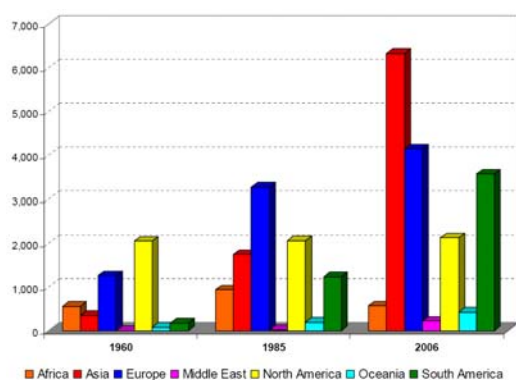
Global refined copper demand in thousands of metric tonnes

The 2007 worldwide copper usage, including the direct reuse of scrap, was 22.8 million tonnes. Building on its main physical and mechanical properties (best electrical and thermal conductor of the metals used in everyday life, malleable, durable and antimicrobial), the growth in examples of copper's innovation spans sectors such as renewable energies, improving energy efficiency, sustainable construction, transport and hospital equipment.

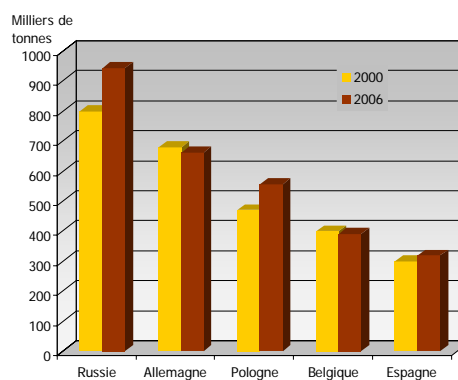
Such a demand growth reinforces the need to make the mining and use of the red metal part of a sustainable initiative. While world mine capacity has risen, from 9.6 million in 1980 to 17.9 million tonnes in 2007, to support this demand, copper recycling has also gone from strength to strength.

Copper production

The total production of refined copper is obtained by adding together primary (metal from extraction) and secondary (recovery and reuse of end of life products) data. In 2007, primary copper production worldwide reached 15.3 million tonnes. By adding 2.8 million tonnes of secondary copper, total refined production was 18.1 million metric tonnes.



Production of refined copper worldwide (thousands of metric tonnes)



Top 5 European copper producing countries

The left hand chart highlights Asia's dramatic rise to the top spot in regional copper production. In 2006, China alone accounted for 17.5% of global production. As refining capacity (2.3 million tonnes) exceeds mine output (0.7 million tonnes), most European copper producing countries, with the exceptions of Russia and Poland, import copper in the form of concentrates from countries such as Chile, Mexico and Indonesia.

Copper usage

Global copper usage currently stands at 22.8 million tonnes (ICSG)⁴, of which 63% is refined primary copper, 11% refined secondary copper (scrap and end of life products requiring a refining stage) and

³ Source: ICSG

European Copper Institute

26% directly re-melted scrap (scrap from throughout the copper value chain). This gives an overall recycling rate of 37%. The main copper using countries and regions are the EU27, with 5.1 million tonnes, China (4.8), USA (3.1), Japan (1.9) and South Korea (1.3).

The case of China is worth highlighting. In 2002, China became the largest national market for refined copper (up from 10% in 1996, to 21% of global demand in 2006). Despite this, refined copper use per inhabitant remains much higher in the more developed economies, such as the former EU15, the USA and Japan, where usage is around 9 kg/capita/year, compared with many of the developing countries, where the usage is 1-2 kg/capita/year.

Importance of copper recycling

A 100% recyclable material



Copper should never be thrown away. Unlike most other materials, it can be 100% recycled forever, with no loss of performance. Copper from recycling is exactly the same as that extracted from a mine. Copper recycling includes so-called "secondary" copper, from the collection of products at the end of their life, such as wires and cables, taps, household devices, IT and electronic equipment, plus the direct re-melting of factory waste generated throughout the copper value chain.

At a global level, 37% of current demand is sourced by recycling. Given the earlier development of the European economy, leading to a larger installed park of copper containing systems and components, Europe's recovery and recycling industries are more widespread and efficient. There has also been strong leadership from the European Commission through Directives such as those covering Waste Electronic and Electrical Equipment (computers, screens, mobile phones, etc can contain up to 20% copper) and End Of Life Vehicles. This leads to 42% of current European copper demand being met through recycling. The "Top 5" users, China (2.1 million tonnes), the USA, Japan, Germany and Italy, accounted for nearly 60% of recycled copper use in 2006.

The main uses of copper in Europe

The use of refined copper within Europe breaks down as follows⁵:

- Electricity and Energy: 58%;

Examples: cables, generators, motors, transformers...

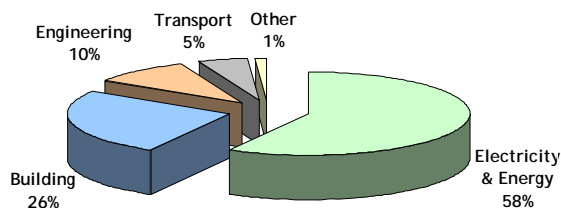
- Construction: 26%;

Examples: façades, cladding, pipes, window and canopy uprights, roofs...

- Engineering: 10%

Examples: machine tools, coins and other objects used in everyday life

- Transport: 5%;
- Other: 1%.



⁴ The International Copper Study Group (ICSG), located in Lisbon, is the inter-governmental reference body for statistics on copper mining, recycling and refining.

⁵ Source: *International Wrought Copper Council (IWCC)*.

5 - Copper's essential properties

Conductivity



Copper is the best electrical and thermal conductor of all the non-precious metals. Its electrical conductivity is 58% greater than that of aluminium.

Recyclability



Copper is 100% recyclable, with no loss of its performance. It is estimated that 80% of the copper produced by mankind is still in use.

Durability



Copper is extremely durable. Some copper roofs are still serviceable after 700 years.

Resistance to corrosion



Highly resistant to corrosion, copper understandably occupies a special place in numerous building applications: pipes, roofs, façades, etc.



Malleability and formability



Copper is characterised by its great malleability and ductility, which makes it a material of choice for designers.

Antimicrobial properties



Pure, or in alloy form, copper is a powerful antimicrobial agent. Known for hundreds of years, this property received official recognition in 2008 from the USA's Environmental Protection Agency.

The origins of copper

Copper is a metal naturally present in the earth's crust, typically in ore bodies containing between 0.5 and 5 % copper. It is essential to the development of all forms of life and was the first metal to be used by man, with the earliest copper coins dating from 8,700 BC.

The world's copper reserves are currently estimated at 3 billion tonnes.

Technical data sheet for copper

Copper is ranked among the most noble metals, just behind platinum, gold and silver in the galvanic series of metals.

- Symbol: Cu
- Density: 8,930 kg/m³
- Melting point: 1,083 °C
- Can be alloyed with other elements, e.g. zinc, tin, lead, nickel and aluminium, to deliver a broad range of technical performance properties
- Available in many forms, including wire, tube, sheet or strip, and rod
- Durability: over 700 years (Roof of the Hildersheim Cathedral remains intact from 1280).
- 100% recyclable without any loss in performance

Copper in a few figures

Copper has been playing a crucial role in civilisation - art, coinage, musical instruments, engineering, technology and electricity - for **10,000** years.

On average, a car contains **20** kg of copper.

400 different copper alloys exist, all with unique properties, and are used in numerous applications.

3,845,000 tonnes of refined copper were used in Europe in 2007.

42% of the copper demand in Europe is met from recycling.

1 mg of copper per day is essential to maintain good health in adults.

3.4 tonnes of copper in a turbine enable wind energy to be converted into electricity.

10,000,000 disease-causing germs, such as *staphylococcus aureus*, can be killed by 1 cm² of copper in a few hours.

Copper is **100%** recyclable ad infinitum.

6 - An international network for copper promotion

ECI is part of the global network of the International Copper Association

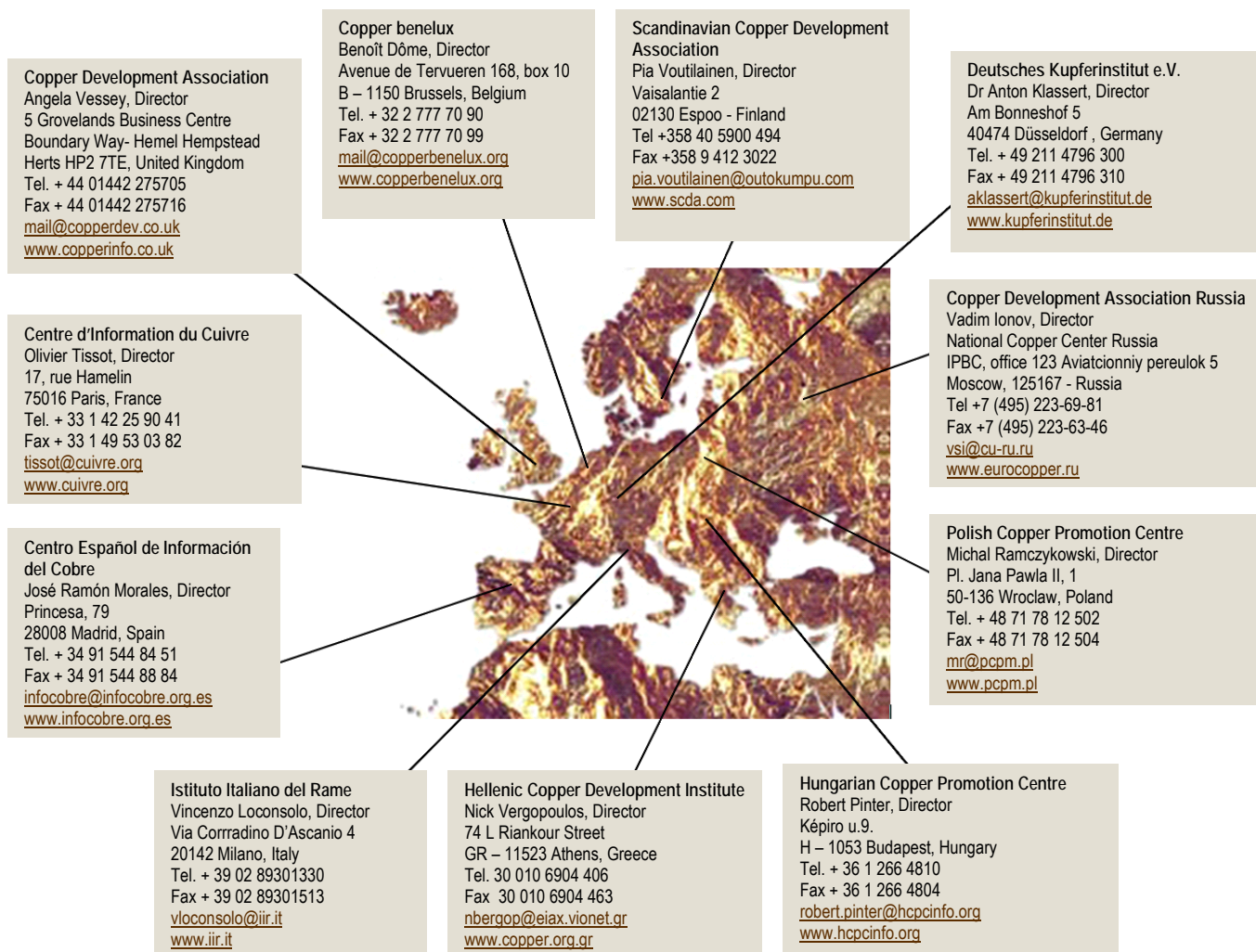
ECI and its network of eleven national Copper Development Associations are affiliated to the *International Copper Association, Ltd. (ICA)*. The ICA is the leading organisation for the promotion of copper worldwide. Founded in 1989, on the initiative of the world's leading copper producers, the ICA's 35 member companies represent over 80% of the world's refined copper output and the world's largest wire & cable and semi-fabricated product manufacturers. Its role is to promote copper's use by communicating the intrinsic qualities that make it a durable material with a vital part to play in the formation of life, the development of science and technology and the improved quality of life for citizens all over the world.

ECI also works closely with the other regional offices of the ICA - Beijing for Asia, Santiago for Latin America, and New York for North America.

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ECI's European network of eleven Copper Development Associations



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