

# The modern world's hidden power

EUROPEAN COPPER INSTITUTE  
2008 Annual Report



# Copper

You don't see it. You don't hear it. You may not know it.  
But it is always there. A driving force for the world of today.  
And tomorrow.

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The European Copper Institute is a joint venture between the world's mining companies (represented by the International Copper Association, Ltd.) and the European copper industry.



*Javier Targhetta*  
Senior Vice President, Marketing & Sales  
Freeport McMoRan Copper & Gold Inc.  
Chairman, European Copper Institute

2008 was a very challenging year for the copper industry value chain. Despite the London Metal Exchange average price falling only slightly, from 7,126 \$/T in 2007 to 6,965 \$/T in 2008, the global economic

refining sectors pushed hard to increase supply, with 2008 refined production expected to grow by around 3%. However, starting in the fourth quarter, the sharp declines in price and demand, plus difficulties in accessing credit, have resulted in substantial cutbacks in production, capital investment and employment.

## Copper benefits support economic development

crisis led to a rapid second half decline in the pricing of all commodities. In late December, the copper price had fallen by 70% compared to early July. Such a large market movement and volatility creates special challenges for downstream copper fabricators and also profoundly affects the independent smelter/refiners and the global mining sector.

By extrapolating the most recent data from the International Copper Study Group, we expect to see falls in the 2008 annual refined copper usage of around 3% in Europe, 4% in Japan and 10% in the USA. However, this reduction is expected to be offset by growth in the developing economies of Asia, such that 2008 global demand will increase 1-2% versus the 2007 all time record of 17.7 million tonnes.

Boosted by capacity investments in 2006 and 2007, the mining, smelting and

While ECI's core strategies remain valid throughout the economic cycle, its members took important steps to redefine the promotional priorities for 2009. The two key areas will, firstly, be to continue to provide the information necessary to assist policy-makers, regulators and other stakeholders in better understanding the benefits provided by copper products. And, secondly, to assist the industry in fulfilling its EU obligations under REACH, the Emissions Trading Scheme and the revision of the Integrated Pollution Prevention and Control directive.

I would like to thank the International Copper Association, the European copper industry, plus our many project partners, for their funding and support and, on behalf of the membership, to thank the ECI and European CDA team for their many achievements throughout the past year.

*John Schonenberger*  
Chief Executive,  
European Copper Institute



2008 marked the tenth anniversary of the opening of ECI's office in Brussels. Throughout the past decade, ECI's key role has been to expand the delivery of information that raises awareness and provides education towards Europe's policy makers, industries and citizens about the environmental, social and

European demand is currently met through recycling.

After three years of intensive discussions, the European Commission and

## ECI's activities support EU goals

economic benefits available through the use of copper and copper alloy products.

The outstanding electrical conductivity of copper will need to be fully exploited if the EU is to meet the 2020 targets contained in its Strategic Energy Review, i.e. reduce greenhouse gas emissions by 20%, increase the share of energy from renewables to 20% and improve energy efficiency by 20%.

Sustainable development and resource conservation drivers continue to impact the construction and industrial equipment sectors, with end-of-life recycling and the useful life span of products being key considerations. Copper scores highly on both of these – it is estimated that 80% of the copper ever mined remains in use today and that 41% of

Member States' review of the copper voluntary risk assessment was completed. The dossier, covering the production, use and end-of-life aspects of the copper value chain, shows that the existing legislative framework generally protects Europe's environment, the health of industry workers and the general public.

New tools were introduced to better communicate, to the EU institutions, how the copper industry is supporting the EU's goals. Emphasis has been on reducing CO<sub>2</sub> emissions, on tackling hospital acquired infections and on copper's contributions towards sustainable production and consumption.

ECI was also pleased to welcome two new semi-fabricator members, Cupori Oy and Leaf Business Holdings.

**Healthy Copper.** Clean water delivered through copper plumbing helps keep the world's population healthy.



**Communications**

In response to a late 2007 survey across nine EU countries and the EU institutions, ECI distributed three newsletters to over 700 policy and decision-makers, opinion leaders and journalists. The main subjects included copper's essentiality

distribution grids, in energy efficiency, renewables and distributed generation. Copper's contributions, e.g. in raising the efficiency of motor-driven systems and voltage transformers, as well as in high voltage underground cables, are delivered to decision makers using innovative

Building on this solid body of evidence, ECI is now leading the REACH Copper Consortium.

**Education and Awareness**

Based on the results of independent market research, a re-designed plumb-

**"I would strongly encourage you to pursue this type of activity. I think it is an eye opener and a reality check that can't be underestimated."**

*Dr. Wolfgang Hehn, Deputy Head of Chemicals Unit, DG Enterprise and Industry*

for health, plus its contributions towards sustainable construction and development, energy efficiency and renewables. To further support this increased public affairs emphasis, ECI hosted a stand and a side visit, for EU policy officers, during the European Commission's Green Week in June.

ECI's pan-European media relations program achieved important success, reaching over 350 million people. The highest viewing figures were associated with the interim results of the UK hospital trial and the introduction of the new law in France requiring the periodic inspection of domestic electrical wiring installations.

**Energy Efficiency**

Efforts, led by the European Commission, to secure reliable and competitive energy supplies for the EU, continue to drive investment in linking up national

e-marketing tools within ECI's Leonardo ENERGY program. Supported by over 150 partners from industry and academia, this global web portal now attracts over 5,000 visitors a day.

**Health and Environment**

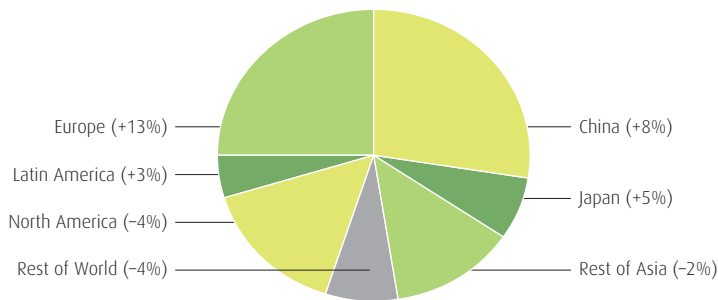
Two trials, set up in the UK and Germany to evaluate the potential for copper alloys to reduce the risk of catching hospital acquired infections, are progressing well. Copper's anti-microbial properties are also being tested in clinical trials in Japan, the USA and South Africa.

Following seven years of preparation, and with the strong support of the Italian Health Ministry, the industry's voluntary risk assessment completed its review by the European Commission and Member States. The dossier confirms that the existing legal framework generally protects Europe's environment, the health of industry workers and the general public.

ing promotion program was launched in Germany, targeting home owners and building developers. The pilot includes the placement, in life style and home-building magazines, of emotional messages highlighting the reliability and health benefits of using copper in domestic drinking water and heating systems. Readers are encouraged to visit a website to learn more, ask questions and have direct access to material suppliers and professional installers.

Programmes promoting copper's benefits in improving energy efficiency, as well as in providing healthy and long-lasting piping and fittings for drinking water, heating and gas installations, continued to expand in Hungary, Poland, Romania, Russia, Turkey and the Ukraine. The United Nations' Global Environment Fund and the EU's Intelligent Energy Europe program are co-funding the energy efficiency activities.

2007 Refined Copper Demand (percentage change from 2006)



2008 was a year of two very distinct halves. In the first half, despite global commodity and energy prices staying well above long term trend line levels, economic growth rates remained vibrant. However, by the 4th quarter, the impact of the financial crisis on indices that drive copper demand was clear. As one example, 4th quarter Industrial Production indices showed a 5% decline, versus the prior year, resulting in indices, for the more developed economies of North America, Europe and Japan, all showing

integral part of economic growth. Ongoing innovations, throughout the copper industry and its downstream value chain, are also helping to mitigate the formidable resource conservation and environmental challenges presented by such growth. Examples include:

- Utilising copper in the generators, power electronics, cabling, controls and protective devices needed to improve the efficiency of all energy systems, including renewables
- Improving vehicle fuel economy, e.g. through the expanded use of electrical drive systems, and lowering air emissions by using CuproBraz®

## In a year of two halves, copper continues to contribute to a sustainable future

negative annual growth of between 1 and 2%.

Understandably, there is significant uncertainty over 2009 demand. However, by extrapolating the latest data from the International Copper Study Group<sup>1</sup>, 2008 global refined demand is expected to reach an all time high of ±18 million tonnes. Approximately 6 million tonnes of value chain scrap and end of life products need to be added to this to arrive at the total demand. The pie chart shows the 2007 usage, by geography, with the percentages showing growth rates versus 2006.

More recently, there has been some substitution, e.g. for competitive material cost reasons in plumbing tube and for technology reasons, towards fibre optic and wireless, in the communications sector. However, copper's intrinsic properties, of conductivity, durability and recyclability, make it a material that is an

alloy radiators that enable hotter engine running temperatures, leading to cleaner exhaust gases

- Copper lead frames, plugs, terminal blocks and other forms of connectors that enable miniaturisation across a broad range of electronic equipment, including personal computers, mobile phones and entertainment systems.

Last, but not least, whatever the life cycle of a copper-containing product, from months in consumer electronics up to decades in the building construction sector, copper's ability to be 100% recycled, without any loss in performance, makes it an important contributor towards a sustainable future.

<sup>1</sup> The International Copper Study Group (ICSG) is an inter-governmental organisation, based in Lisbon, that publishes copper production and demand statistics.

# Programme Highlights

**Innovating with copper.** Present in computer chips, printed circuits and mobile telephones, copper is a key component of information and communications technology.





**“Filling up” with copper.**  
 Without copper, it would be impossible to fill up the electric car of the future.



**Industry launched new products for construction sector**

Mainly due to fears over a continued escalation in the relative market price of copper, material substitution was very evident in plumbing, heating and architectural applications at the start of 2008. The industry responded to these concerns by introducing new, lighter weight products, which at the same time

and marketing tools, including training courses for young plumbers and architects, press advertising, publications, school education kits, and environmental workshops. Relevant and timely contributions were made into the European debate on sustainable construction policy. These reflected the very positive progress made by the industry, over the past five years, in improving its under-

portal and newsletter, ECI has actively participated in the solar industry’s efforts to establish solar as a credible source of heating and cooling. ECI also continued

## ECI focused on regulatory engagement and supply chain education

retained the key performance attributes of copper, such as reliability, durability, recyclability and its essentiality for human health.

The second half of the year saw a dramatic change in market prices, although this was coupled with a serious slow down in the European new build market. However, copper does well in the renovation sector. In October, ECI launched a pilot plumbing campaign, in Germany, to support the use of copper directly with the building owner. This campaign will compliment the long established work carried out with the plumbing contractors and installers.

**ECI supports professional education and EU regulatory agenda**

ECI’s Building Construction program maintained high standards in communications

standing of the environment and health matters relating to its products.

The Copper in Architecture campaign focussed its [www.copperconcept.org](http://www.copperconcept.org) website (the largest repository of copper installations in Europe) on facades and introduced projects on solar shading. Environmental science, derived from ECI’s Voluntary Risk Assessment, plus life cycle data from its European Competence Centre, supported the continued use of copper in building applications.

**Copper’s thermal conductivity positions it well in renewables**

The EU’s 20% renewables by 2020 target, plus the heating and cooling directive, helped to drive market conditions for renewable technologies. By facilitating policy and technical workshops, plus developing a knowledge management

to support the development of the European Solar Thermal Technology Platform.

**ECI improved links with Original Equipment sector**

Pressures on weight savings, emissions and costs continue to drive technology development in the OEM sector. ECI worked with the copper industry and global automotive leaders to position copper intensive solutions that meet new requirements for wire harnesses and hybrid vehicles. Similarly, the air-conditioning manufacturers drive for cost reduction and increased efficiency provided the opportunity to present all copper heat exchanger solutions and lower weight components. Fuel efficiency drivers also saw a new interest in copper motor rotors for air conditioning units and automotive drive trains.



### EU-wide survey results led to increased public affairs actions

As a result of feedback from a 2007 opinion survey, ECI launched a newsletter to over 700 EU policy-makers, regulators, other opinion leaders and the general media. It covered a broad range of subjects, includ-

### Benefits communicated through national media

Outputs from ECI's media relations program resulted in press, TV and radio coverage that reached an audience of 350 million. Leading media outlets included the BBC, Sky News, TV5 Monde,

### Communicating through copper.

Information flows around the world. But it all starts and finishes with copper.

### New EU partnerships developed with key stakeholders

In support of its Leonardo ENERGY initiative and Building Construction program, ECI maintained partnerships with EURACTIV, the World Energy Congress and Batibouw in Belgium. Press kits were prepared on "Copper at the Core of Renewable Energies" and "Copper a Key Material for Sustainable Homes". All press kits, plus a comprehensive photo library for media use, are available on ECI's website.

## Communications highlight copper's contributions towards achieving EU goals

ing how copper can substantially reduce CO<sub>2</sub> emissions, its essentiality for health, how it makes high speed trains travel faster, and how it contributes to the safety and convenience of modern homes. A year end reader survey confirmed the value of continuing it in 2009.

ECI exhibited at the Commission's Green Week, which focussed on the Sustainable Use of Natural Resources. ECI's stand highlighted three of copper's core benefits – natural, sustainable and recyclable. A visit to member company, Metallo-Chimique, enabled EU policy officers to better understand the contributions that the recycling of copper (and metals in general) makes towards the achievement of the EU's goals.

CNN International, ZDF, Euronews, Financial Times, Le Monde and the Frankfurter Allgemeine Zeitung.

Press events, in Germany, Greece and the UK, to provide updates on the antimicrobial hospital trials were particularly well reported. A French campaign on communicating "Copper's role at the heart of the home of tomorrow" won the Sustainable Development prize at the 2008 FIMBACTE Festival.

The Italian Copper Development Association hosted its second "Copper in Design" exhibition in Milan. Providing a showcase for the work of some of the world's leading designers, the competition attracted over 130 proposals, a 70% increase over 2007.

### New Corporate Information Kit issued

In response to media requests, ECI published a press kit providing facts and figures about the properties of copper and the benefits delivered in its key markets.

### E-communications

A major revamp of ECI's website provided an improved search function, daily updates to the LME copper price, the opportunity for visitors to sign up for an RSS link and a direct link to the REACH Copper Consortium. The websites of the Copper Development Associations in Scandinavia and Spain were also revamped in the same style.

“Energy efficiency is the quickest, cheapest and most direct way to turn Europe’s energy challenges into real opportunities. With existing technologies, energy savings of up to 30% are already feasible”.

— *Fiona Hall*, Member European Parliament  
Industry, Research and Energy Committee

### ECI contributed to EU Energy Policy

ECI became a founding member of the Energy Efficiency Industry Forum. This group of industry associations advocated for stronger commitments on energy efficiency. One important achievement was the inclusion of

### Leonardo ENERGY expanded its partnerships and outreach

2008 was another record year for Leonardo ENERGY. Traffic to its web portal, which delivers advocacy and education across a broad range of sustainable energy issues, has increased to over 5,000 visits/day.

### Convenience and safety at the heart of ECI’s residential campaign

After years of intelligence gathering and advocacy, by ECI and its partners in the Forum for European Electrical Domestic Safety, a new law, requiring inspection for residential properties at the time of

## Concerns over energy security led to an accelerated focus on energy efficiency and renewables

energy efficiency as one of the pillars of the EU’s Strategic Energy Review, published last November.

The drive to link up national electricity grids also provided an opportunity to highlight actions to reduce transmission and distribution losses. With the completion of its project, co-funded by Intelligent Energy Europe, on Standards for Energy Efficient Distribution Transformers, ECI is qualified to contribute to the new preparatory study on transformer efficiency under the Energy Using Products Directive.

Under the same directive, the Commission concluded its study on electric motors with a proposal for minimum efficiency standards. The proposal, that motors in the power range of 0.75–200 kW, need to match or exceed level 2 (high efficiency) by 2011, and level 3 (premium efficiency) by 2015, is now under EU review.

With the support of 150 academic and industrial partners, over 1,400 individual marketing actions were organised. The site has 60,000 e-mail subscribers and more than 1,600 information points have received over 1,000 visits. To expand outreach, chapters are now available in Spanish, Mandarin and Russian.

With the EU committed to sourcing 20% of its 2020 energy demand from renewables, ECI communicated on those sectors which will benefit from copper’s outstanding conductivity – small-scale photovoltaic and wind energy systems, repowering wind turbines and concentration photovoltaics.

Spinoffs from the 2004 EU award-winning Leonardo Power Quality Initiative have been launched through new partnerships in Latin America and Asia (China, India and Thailand). By promoting mainly copper-intensive solutions, the project aims for a 30% increase in the market for Power Quality mitigation.

sale, came into force in France, from January 1st 2009. In cooperation with the European Fire Academy, a program to build a database for fire statistics has been accepted by the European Commission. Meglena Kuneva, the Commissioner for Consumer Protection, participated in the Academy’s latest roundtable.

An e-based training course has been developed on integrated home systems. This course, which has attracted 28,000 readers within its first eight months, has also been adopted by the European Association of Electrical Contractors.

In Senegal, a business case has been developed for semi-urban electrification. Based on a pilot in Brazil, the project combines a reduction in electricity theft, a 10% reduction in consumption, through the use of higher efficiency white goods, plus an important improvement in electrical safety. The project, with the potential for replication throughout sub-Saharan Africa, has attracted sizeable interest from major development agencies.

**“ECI’s Voluntary Risk Assessment is a comprehensive and well prepared dossier, covering the production, use and end-of-life aspects of the copper value chain”.**

— *Dr. Roberto Binetti and Dr. Leonello Attias,*  
Istituto Superiore di Sanità, Italy as Review Country

### **ECI launched REACH Copper Consortium**

ECI was appointed Secretariat of the REACH Copper Consortium. The Consortium’s management and technical

Commission’s Scientific Committee on Health and Environmental Risks.

Representatives of Italy’s Istituto Superiore di Sanità, who acted as review country, have stated that “ECI’s Voluntary

the non-ferrous metals industry. An ECI working group, comprising all of its smelting and refining members, has submitted updated descriptions for each site. Several companies have also hosted

## **ECI’s activities support the EU’s sustainable development goals**

groups have reached agreement on the scope and identities, fees and lead registrants of the various substances to be registered. Over 5,000 legal entities had successfully pre-registered copper by the due date of December 1st 2008.

Each pre-registered substance automatically opens a Substance Information Exchange Forum. Consortium members will be acting as SIEF facilitators. Their task is to lead discussions, amongst the other pre-registrants, on the “sameness” of the substance, on the availability of existing data and on the need for additional information gathering.

### **EU bodies approved Voluntary Risk Assessment for copper**

ECI’s Voluntary Risk Assessment for copper and several copper compounds will form the backbone of the REACH copper registration dossier. After extensive review, both the human health and environmental risk assessments were accepted by the EU’s Technical Committee on New and Existing Substances in April. Recognition was also obtained from the EU Biocidal Products Directive Technical Meeting and the

Risk Assessment is a comprehensive and well prepared dossier, covering the production, use and end-of-life aspects of the copper value chain. It shows that the existing legislative framework generally protects Europe’s environment, the health of industry workers and the general public.”

### **ECI science contributed to EU regulatory guidelines**

ECI was invited to contribute the risk assessment’s novel science, on essentiality and bioavailability, into the Commission’s new technical guidelines for the classification and labelling of metals. These will be important for both REACH and other requirements under the Global Harmonised System. ECI also wrote most of the technical content for the new guidelines on setting quality standards for metals in water, sediments and biota. These will be key in the implementation of the EU’s Water Framework Directive.

### **Industry started Best Available Technology update**

The Commission released its draft revision of the BAT Reference document for

visits for EU policy officers that have substantially contributed to the revision.

### **Life cycle data supports copper’s use in Building Construction**

Data provided by ECI’s Life Cycle Centre, in Dusseldorf, to the EU’s Life Cycle Database have been expanded to include copper tube. This reference database now contains data for copper sheet, wire and tube. Data has also been used for the development of the UK’s Green Guide for sustainable buildings, with most copper applications obtaining the highest ratings (A or A+).

### **ECI submits industry response on Emissions Trading Scheme**

Under the revised Emissions Trading Scheme, ECI assesses that the European copper industry is exposed to carbon leakage. ECI has worked with the industry to populate the datasets, required by the Commission’s Industry & Trade Directorate, to identify whether there is a justification to grant certain sub-sectors with free allocations for the direct and indirect effects of CO<sub>2</sub> emission taxes.

**Reducing CO<sub>2</sub> emissions with copper.**

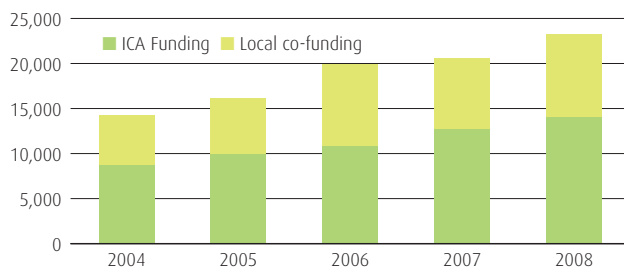
ECI secured funding from the United Nations Global Environment Fund to promote the use of solar thermal energy technologies.



Throughout 2008, ECI and its network of eleven national Copper Development Associations operated with a budget

## New funds for new initiatives

**European promotion funds (K\$)**



**2008 funds (K\$)**

Strategic Initiative	ICA Funding	European Co-funding	Total
Building Construction	4,800	4,600	9,400
Electricity & Energy	3,600	3,200	6,800
OEM & Technical support	1,500	400	1,900
Market Intelligence	100		100
Environment	1,600	300	1,900
Communications	1,100	200	1,300
Administration	1,300	600	1,900
<b>Total Funds</b>	<b>14,000</b>	<b>9,300</b>	<b>23,300</b>

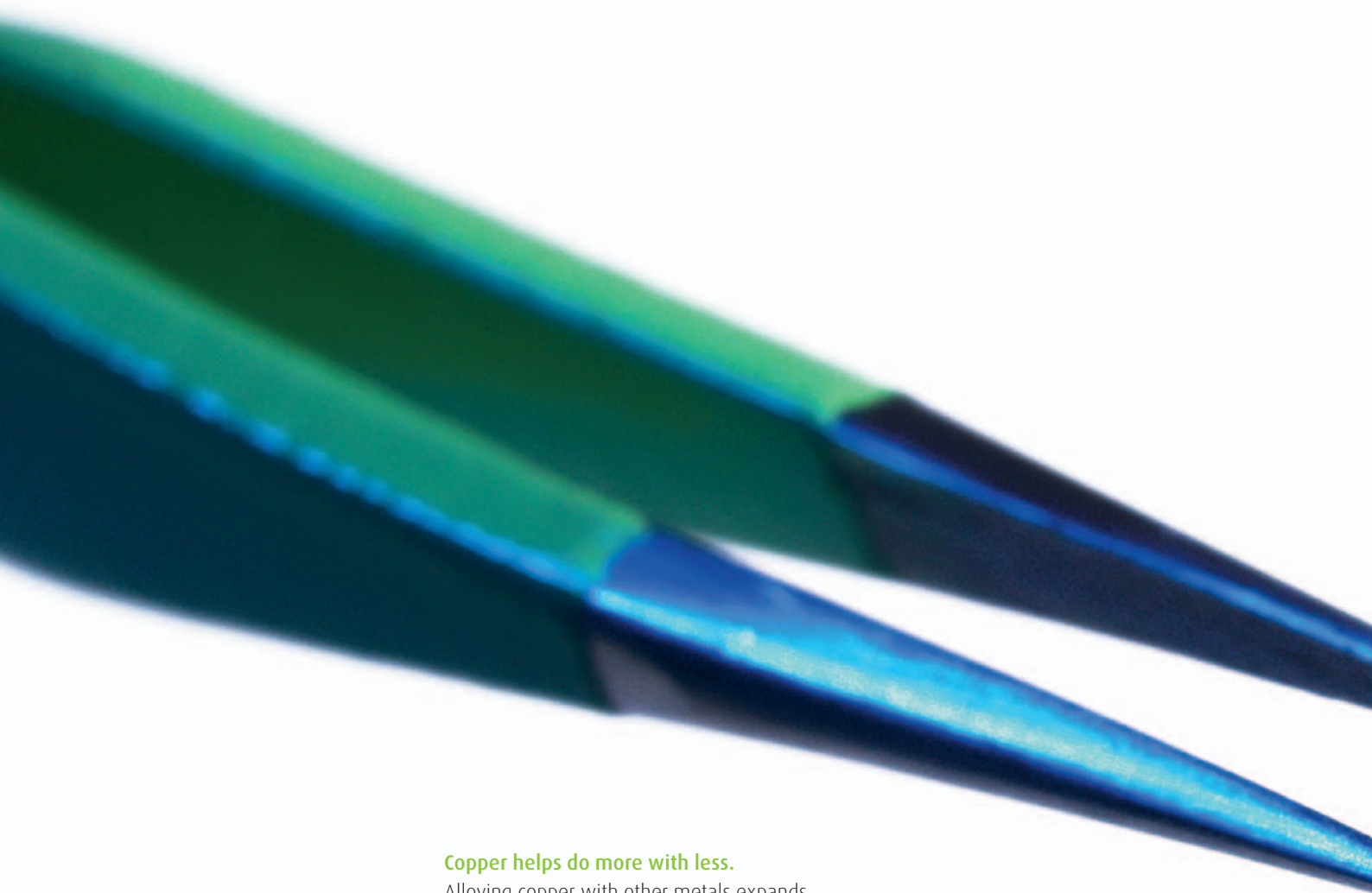
of 21 M\$ (15 M€) for promotional and regulatory activities across the region.

In addition, the European network's resources managed a 2 M\$ budget for projects targeted at impacting the global demand for copper.

Over 150 partners, both academic institutions and industrial companies, continue to provide strong support for ECI's Leonardo ENERGY program. The European Union and United Nations Global Environment Fund also funded electrical energy efficiency projects in the east of the region.

In the 4th quarter, ECI was successful in securing new funding, 12 M\$ over 5 years, from the United Nations Global Environment Fund to promote the use of solar thermal energy technologies in six developing countries around the world.

# Copper Development Association Achievements



**Copper helps do more with less.**

Alloying copper with other metals expands its properties and supports miniaturisation.

## Benelux – Copper Benelux

The availability of more environmental information, e.g. on ways to manage rain run off from architectural applications, has further raised the profile of Copper Benelux within the construction sector. This was confirmed through visits to over 1,000 architects and the steady stream of  $\pm 200$  visitors/day to the CDA's website.

Two newsletters were sent to 11,000 and 8,000 professionals respectively. One highlighted the benefits provided by copper tubes in reducing harmful bacteria, biofilm formation and hence Legionella. The other described how more copper intensive installations can reduce concerns linked to electromagnetic radiation (electrosmog) in residential homes and offices. Efforts to maintain well targeted databases were rewarded with very high, 60%, click throughs to the texts.

To demonstrate the superior reliability of copper plumbing installations, a video was produced to compare copper's temperature, pressure and elongation performance versus cross-linked polyethylene and polyethylene/aluminium multilayer tubes.

Copper Benelux's remaining technical publications were scanned onto its website. This has expanded the visibility for the material, as well as reduced the administrative effort of delivering it.

## France – Centre d'Information du Cuivre (CICLA)

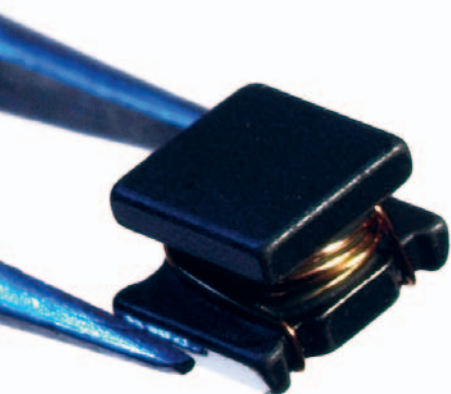
In the building sector, CICLA focused on the delivery of health and environment messages. A press conference communicated on a recent report (by KIWA in the Netherlands) and on a bibliographical thesis, led by Professor Levi, Director of Public Health at the University of Paris-Sud. Both showed that copper tubes significantly reduce the build up of biofilms and bacteria and therefore lower the risk of Legionella.

Boosted by the "Grenelle Environnement", underfloor heating systems were emphasised in the tube campaign. The European Life Cycle Centre is also helping to prepare an Environmental Product Declaration for tubes.

In Electricity and Energy, the new law mandating an electrical safety inspection, when selling a residential property, became effective on 1st January 2009. Future advocacy will seek to extend this to cover rentals and the common parts of buildings.

A new contract with Schneider Electric allows CICLA to participate in the HOMES project. Backed by Government funding, this targets a 20% reduction in the energy consumption in buildings.

Visitors to the new French chapter of the Leonardo ENERGY web platform increased by 20%. The platform delivers advocacy and education across a broad range of sustainable energy issues.





NATURAL  
1,000 micrograms of copper a day  
keeps the doctor away

Copper is an essential mineral to help us stay in good health. Important sources include shellfish, cereals, nuts, raisins and chocolate.



### Germany – Deutsches Kupferinstitut e.V. (DKI)

The completion of a medical devices dossier facilitated an antimicrobial clinical trial by the ASKLEPIOS hospital chain. Media responses from the resulting press conference reached 22 million readers and viewers, more than 25% of the German population.

A new end-user plumbing campaign was launched with the strong support of the fabricating industry. By delivering strong messages on the reliability, durability and health benefits of using copper in drinking water and heating systems, the objective is to convince future home owners and property developers to choose copper.

As the sophistication of component and assembly designs continues to increase across the industrial, electrical and equipment sectors, the DKI is playing an important role in satisfying market needs for physical and mechanical properties on copper and its alloys. Data is made available through a combination of web based, CD and printed tools.

The DKI has made important efforts to raise its profile in the electrical energy efficiency sector. The increased availability of position papers, many delivered through Leonardo ENERGY, plus presentations at conferences and workshops, have raised the sector's awareness of the performance improvements achievable with copper.

### Greece & Bulgaria – Hellenic Copper Development Institute (HCDI)

As part of efforts to educate young professionals, HCDI organised its annual plumbing skills competition. 60 students, representing 30 schools, took part in the final, held in Thessaloniki. In addition to developing practical skills, the competition also educates on copper's technical, durability and health benefits.

Copper plumbing promotion was launched in Bulgaria. A new website was promoted and local language publications were made available to educational organisations.

Seizing an opportunity to improve health care standards, HCDI built on the USA's Environmental Protection Agency approval to allow the marketing of copper as an antimicrobial agent. Touch surfaces, made of copper and high copper alloys, can significantly reduce the harmful bacteria that can lead to hospital acquired infections.

Key actions were an international congress on "Copper and Public Health" and a forum on "Copper Hardware & Fittings in Health Care Facilities". These events attracted over 100 professionals from the health care sector, the national Government and the press.

HCDI's newsletters continued to deliver a broad range of copper benefit messages to professionals, mainly across the building construction and electricity and energy sectors.

### Hungary, Czech Republic, Slovakia & Romania – Hungarian Copper Promotion Centre (HCPC)

With HCPC now promoting to audiences in four languages, including Romanian, communications delivered through local language websites are proving to be the most effective. As one example, the Hungarian version of the copperconcept website, focused on "inspiring architects", received 20,000 visitors during 2008.

The web-based education program and competition for young plumbers also registered a record number of participants, with 503 students, from 57 schools, taking part. HCPC also continued in its role of providing skills checking and certification for plumbing professionals working in the gas sector.

For most of 2008, building construction was booming in Romania. HCPC programs targeted professional decision makers in the tube and architecture sectors via websites, articles in the trade press and home builder magazines. The industry reported solid copper demand growth in both these key sectors.

In the electricity area, a self-learning certification module on Power Quality was organised for professionals in Budapest. HCPC also attended several seminars on renewable energies. More than 500 designers received information on how copper's outstanding conductivity can improve the efficiency of renewable energy systems.



## SUSTAINABLE

4 tonnes of copper reduce CO<sub>2</sub>  
emissions by 800 tonnes/year

4 tonnes of copper are used in the gear box, generator, supply cables and voltage transformer for each 1MW turbine.

### Italy – Istituto Italiano del Rame (IIR)

IIR continued its widespread messaging of copper's advantages towards well targeted professional audiences. More than thirty meetings and seminars, held all over Italy, were attended by over 2,500 architects, planners, engineers and plumbers. Emphasis areas were highlighting copper's antimicrobial properties on touch surfaces, as well as on its role in helping reduce the risk and spread of legionella in water distribution systems.

IIR staff and key partners also delivered lectures at universities and technical schools with strong faculties in engineering and architecture. A focus was on promoting the role of copper in solar and other renewable energy applications.

There is an increasing demand for information on the sustainability credentials of materials, particularly from the building sector. IIR published an eight page newsletter entitled "Copper Tube and Energy Saving" and organised twelve bio-housing seminars, mainly focused on "Copper's Role in Rational Use of Energy in Sustainable Buildings".

A last highlight was the "Copper in the Home" design award. This year's competition attracted 133 projects from professionals and students in nine European countries. Good media coverage was achieved in several design and general press publications.

### Poland & Ukraine – Polish Copper Promotion Centre (PCPC)

Recognising major investments in electricity and energy infrastructures in east Europe, PCPC participated in projects aimed at building the business case to increase the efficiency levels of voltage transformers and electric motor systems.

As coordinator of an EU project to promote Energy Efficient Electric Motors in Central and Eastern Europe, PCPM implemented several tools from the EU's Motor Challenge Programme. Many partners joined the initiative and dozens of energy audits were performed. These have substantially raised awareness amongst the broader industry and revealed the significant potential for energy efficiency improvements.

The industry launched a new technology copper plumbing tube, one where a plastic sleeve is extruded onto the outside of a thinner-walled copper tube. A new promotional campaign targeted its use in heating systems.

A new, web-based educational platform includes explanations on the essentiality of copper for human health, the way in which it re-enters the environment and its role in newer technologies, such as renewable energy generation and use.

PCPC also expanded its activities in the Ukraine, by supporting national norms, based on EU legislation, for copper pipes in heating, water distribution and gas supply systems.

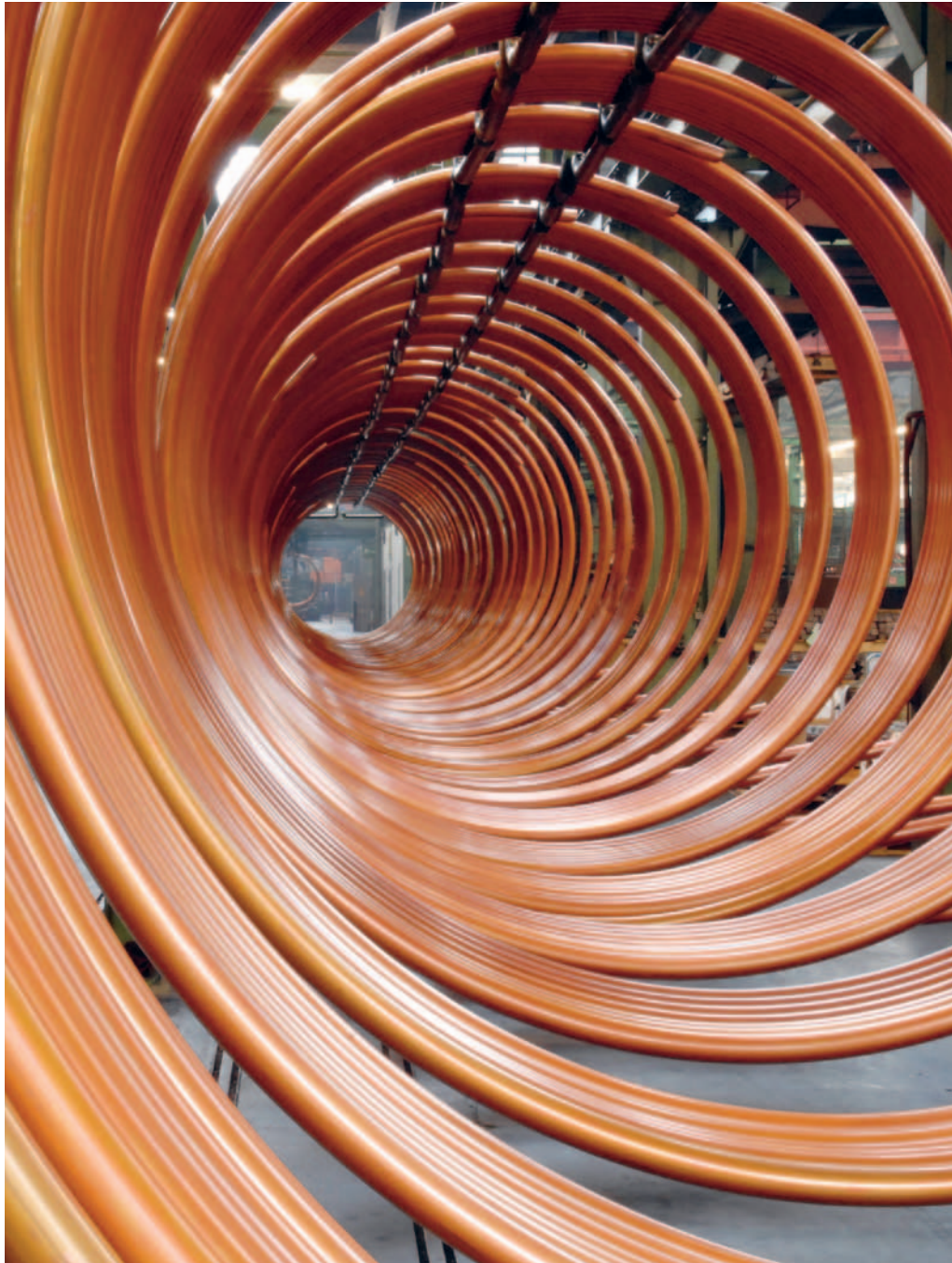
### Russia – National Copper Center (NCC)

Rapid developments in the energy sector, in building and construction and in processing industries, have nearly doubled Russia's domestic copper use since 2003.

Since its start up in 2001, NCC has been trying to change the former mentality that copper was not necessary in Russian buildings. The performance needs, satisfied in other countries by copper, were met by materials such as steel, aluminium and plastics. In 2008, NCC's efforts have been further rewarded by official adoption of three national standards covering the various fittings used in copper water and gas piping.

With a strong platform of norms and installation guidelines now in place, NCC has launched an awareness and education program in the western part of Russia. Delivered through a "Teach the Teacher" approach, both the fundamental benefits of copper, plus basic and skills upgrade courses, are being provided.

NCC has also taken steps to raise awareness, by the medical community and the government regulator, of the practical benefits of copper's antimicrobial properties, both in a medical and an everyday environment. The goal is to seek a reasonable degree of government endorsement for copper's use in relevant applications.



## RECYCLABLE

Copper can be recycled 100%  
without any loss of performance

When recycling copper, nothing is wasted. Copper recycling strongly supports sustainability, preserves primary resources, and helps the global environment. The CO<sub>2</sub> savings from recycling, versus mining, one tonne of copper are equivalent to those emitted by a car travelling 18,000 km (at 130 gm CO<sub>2</sub>/km).

**“The findings of a 90 to 100% killing of those organisms, even after a busy day on a medical ward with items being touched by numerous people, is remarkable. So it may well offer us another mechanism for trying to defeat the spread of infection.”**

— Professor *Tom Elliott*, University Hospital Birmingham NHS Foundation Trust

### Denmark, Finland, Norway and Sweden – Scandinavian Copper Development Association (SCDA)

SCDA has communicated the conclusions from the copper Risk Assessment and its roof run-off studies to the Swedish municipalities and building sector. These have shown the very significant reduction in architectural emissions, since the 1970s, as well as provided new science to help set more relevant limits for copper in Swedish surface waters.

SCDA contributed to a Swedish Environmental Research Institute project aimed at gaining acceptance for the use of bioavailability methodologies in setting water quality standards. Results have been communicated to the Authorities.

A material flow and environmental impacts analysis of Scandinavian copper production was carried out, with the results contributed to a Finnish national study.

A complaint was filed to the Swedish Council of Market Ethics about a competitive material advertising campaign that used false arguments about copper tubes. The Council ordered the withdrawal of the advertising.

The Skyline Event, offering roof walks on Stockholm’s old parliament house, continued. All 2nd year architect students from the Royal Institute of Technology were invited to participate in a full day event describing copper and its many applications in architecture, both renovation and modern.

### Spain and Portugal – Centro Español de Información del Cobre (CEDIC)

CEDIC remained active in the building construction sector, with a broad range of promotional actions targeted at regulators, specifiers and consumers. With the support of the European Life Cycle Centre, the publication of a comparative life cycle assessment on drinking water installations showed very positive results for copper.

A new technical manual, covering copper tubes and fittings, was fully financed by the Spanish Association for Standardisation (AENOR).

Communications activities were enhanced through the launch of a completely revamped website.

The Spanish language chapter of ECI’s Leonardo ENERGY platform is now well established, with regular contributions targeting audiences in Spain and Latin America. A series of interactive events (webinars) is being launched.

Following on from successes in France, Belgium and parts of Spain, CEDIC is working with its partners on the business case for a Spanish-wide platform for the inspection and renovation of electrical installations. CEDIC is expanding its market intelligence and fire statistics to support an approach to Members of Parliament who may be willing to raise this issue with the Government legislator.

### United Kingdom – Copper Development Association UK (CDA UK)

The antimicrobial copper program moved up a gear with the publication of the first results from the Selly Oak clinical trial at the “Interscience Conference on Antimicrobial Agents and Chemotherapy” in Washington, USA. A coordinated effort with the trial partners and the European CDAs led to excellent media coverage on the 90–100% reduction in contamination observed on the copper surfaces.

Data from ECI’s Life Cycle Centre, in Dusseldorf, plus close follow-up, led to copper roofing and cladding constructions being awarded extremely favourable ratings in the UK Building Research Establishment’s Green Guide for architects and specifiers.

Green messages also formed part of the plumbing campaign. A new magazine partnership, on a series of technical articles, achieved unprecedented coverage.

In support of ECI’s Leonardo ENERGY program, CDA UK provided technical guidance, website editorial review, web-cast production and campaign press releases.

CDA UK marked its 75th anniversary with an exhibition and lunch for 140 of its members, their guests and trade press. The antimicrobial clinical trial leader, Professor Tom Elliott, from the University Hospital Birmingham NHS Foundation Trust, was the guest speaker.

# Access the global network

## HEADQUARTERS

*Francis J. Kane, President*  
**International Copper Association, Ltd.**  
 260 Madison Avenue, 16th Floor  
 New York, NY 10016-2401, USA  
 Phone: + 1 (212) 251 72 42  
 Fax: + 1 (212) 251 72 45  
 E-mail: FrancisJKane@copper.org  
 www.copperinfo.com

## REGIONAL OFFICES

### EUROPE & AFRICA

*John Schonenberger, Chief Executive*  
**European Copper Institute**  
 Avenue de Tervueren 168, b 10  
 B-1150 Brussels, Belgium  
 Phone: (32-2) 777-7070  
 Fax: (32-2) 777-7079  
 Email: eci@eurocopper.org  
 www.eurocopper.org

*Benoît Dôme, Director*  
**Copper Benelux**  
 Avenue de Tervueren 168, b 10  
 B-1150 Brussels, Belgium  
 Phone: (32-2) 777-7090  
 Fax: (32-2) 777-7079  
 Email: benoit.dome@copperbenelux.org  
 www.copperbenelux.org

*Olivier Tissot, Director*  
**Centre d'Information du Cuivre  
 – Laitons et Alliages**  
 17, rue de l'Amiral Hamelin  
 F-75016 Paris, France  
 Phone: (33-1) 4225-2567  
 Fax: (33-1) 4953-0382  
 Email: tissot@cuivre.org  
 www.cuivre.org

*Dr.-Ing. Anton Klassert, Director*  
**Deutsches Kupferinstitut  
 Berufsverband e.V.**  
 Am Bonneshof 5  
 D-40474 Düsseldorf, Germany  
 Phone: (49-211) 4796-313  
 Fax: (49-211) 4796-310  
 Email: aklassert@kupferinstitut.de  
 www.kupferinstitut.de

*Nick Vergopoulos, Director*  
**Hellenic Copper Development Institute**  
 2-4 Messogion Str.  
 Athens Tower, Building C  
 GR-115 24 Athens, Greece  
 Phone: (30-210) 686-1590  
 Fax: (30-210) 686-1589  
 Email: nbergop@eiax.vionet.gr  
 www.copper.org.gr

*Robert Pintér, Director*  
**Hungarian Copper Promotion Centre**  
 H-1053 Budapest, Képiró u. 9., Hungary  
 Phone: (36-1) 266-4810  
 Fax: (36-1) 266-4804  
 Email: robert.pinter@hcpcinfo.org  
 www.hcpcinfo.org

*Vincenzo Loconsolo, Director*  
**Istituto Italiano del Rame**  
 Via C.d'Ascanio 4  
 I-20142 Milano, Italy  
 Phone: (39-2) 8930-1330  
 Fax: (39-2) 8930-1513  
 Email: vloconsolo@iir.it  
 www.iir.it

*Michał Ramczykowski, Director*  
**Polskie Centrum Promocji Miedzi**  
 Pl. Jana Pawła II, nr 1  
 50-136 Wrocław, Poland  
 Phone (48-71) 781-2502  
 Fax: (48-71) 781-2504  
 Email: mr@pcpm.pl  
 www.pcpm.pl

*Vadim Ionov, Director*  
**National Copper Center, Russia**  
 Office 123, IPBC, Aviacionniy Pereulok 5  
 Moscow 125167, Russia  
 Phone: (7-495) 223-6981  
 Fax: (7-495) 223-6346  
 Email: vsi@cu-ru.ru  
 www.cu-ru.ru

*Pia Voutilainen, Director*  
**Scandinavian Copper Development  
 Association**  
 Vaisalantie 2  
 FI-02130 Espoo, Finland  
 Phone: (358 40) 59 00 494  
 Fax: (358 9) 412 30 22  
 Email: pia.voutilainen@scda.com  
 www.scda.com

*José Ramón Morales, Director*  
**Centro Español de Información del Cobre**  
 Calle Princesa 79 – 1º izda.  
 E-28008 Madrid, Spain  
 Phone: (34-91) 544-8451  
 Fax: (34-91) 544-8884  
 Email: jrmorales@infocobre.org.es  
 www.infocobre.org.es

*Angela Vessey, Director*  
**Copper Development Association UK**  
 5 Grovelands Business Centre  
 Boundary Way  
 Hemel Hempstead HP2 7TE United Kingdom  
 Phone: (44-1442) 275 705  
 Fax: (44-1442) 275 716  
 Email: angela.vessey@copperdev.co.uk  
 www.copperinfo.co.uk and www.brass.org

*Robert J. Kempthorne, Managing Director*  
**Copper Development Association Africa**  
 53 Rendell Road  
 Wadeville, Johannesburg, South Africa  
 Phone: (27-11) 824-3916  
 Fax: (27-11) 824-3120  
 Email: bobkempthorne@copper.co.za  
 www.copper.co.za

## ASIA

*Richard Xu, Regional Director*  
**International Copper Association, China**  
 Room 2814-24, Central Plaza,  
 381 Huai Hai Zhong Road  
 Shanghai, P.R. China 200020  
 Phone: (86-21) 6391 5816  
 Fax: (86-21) 6391 6331  
 Email: richardxu@copper.org.cn  
 www.copper.org.cn

*Ajit Advani, Deputy Regional Director*  
**International Copper  
 Promotion Council – India**  
 602, Omega, Hiranandani Gardens, Powai  
 Mumbai 400 076, India  
 Phone: (91-22) 6693-7989  
 Fax: (91-22) 6693-9282  
 Email: ajit\_advani@icpci.org  
 www.copperindia.org

## LATIN AMERICA

*Miguel Riquelme Alarcón, ICA Regional  
 Director – Latin America*  
**International Copper Association, Ltd.**  
 Latin American Office, Vitacura 2909,  
 Oficina 303  
 Las Condes, Santiago, Chile  
 Phone: +56 (2) 335 3386  
 Fax: +56 (2) 335 3264  
 Email: mriquelme@copper.org  
 www.procobre.org

## NORTH AMERICA

*Andrew G. Kireta Sr., President & CEO*  
**Copper Development Association Inc.**  
 260 Madison Avenue, 16th Floor  
 New York, NY 10016-2401, USA  
 Phone: +1 (212) 251-7223  
 Fax: +1 (212) 251-7234  
 Email: agkiretasr@cda.copper.org  
 www.copper.org

# Access the membership

## **CORPORACIÓN METALÚRGICA CATALANA S.L.**

Colonia Lacambra s.n.  
08509 Masies de Voltregà (Barcelona), Spain  
www.lfl.es

## **CUMERIO<sup>1</sup>**

31 rue du Marais,  
1000 Brussels, Belgium  
www.cumerio.com

## **CUPORI OY**

Vaisalantie 2  
Espoo, FI 02130  
Finland  
www.cupori.com

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Heinrich-Diehl-Str. 9  
90552 Röthenbach ad Pegnitz, Germany  
www.diehlmetall.de

## **HALCOR S.A.**

252, Pireaeus street  
Athens 177 78, Greece  
www.halcor.gr

## **IBP CONEX LIMITED**

Whitehall Road  
Tipton, DY4 7JU, United Kingdom  
www.ibpgroup.com

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www.kme.com

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Europa House, Church Street  
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www.luvata.com

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Nieuwe Dreef 33  
2340 Beerse, Belgium  
www.metallo.com

## **MONTANWERKE BRIXLEGG AG**

Werkstrasse 1  
6230 Brixlegg, Austria  
www.montanwerke-brixlegg.com

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Oxford Street,  
Bilston, WV14 7DS, United Kingdom  
www.muellerindustries.com

## **NORDEUTSCHE AFFINERIE AG<sup>1</sup>**

Hovestrassse 50  
20539 Hamburg, Germany  
www.na-ag.com

## **OMG KOKKOLA CHEMICALS OY**

P.O. Box 286  
67101 Kokkola, Finland  
www.omgi.com

## **PEGLER YORKSHIRE GROUP LTD.**

St Catherines Avenue  
Doncaster DN4 8DF, United Kingdom  
www.yorkshirefittings.co.uk

## **SANHA KAIMER GmbH/KG**

Im Teelbruch 80  
45219 Essen-Kettwig, Germany  
www.sanha.com

## **SOFIAMED S.A.**

Gara Iskar  
4 Dimitar Peshev str.  
1628 Sofia, Bulgaria  
www.sofiamed.bg

## **VIEGA GmbH & CO. KG**

Postfach 430/440  
57428 Attendorn, Germany  
www.viega.com

## **WIELAND-WERKE AG**

Graf-Arco-Strasse 36  
89079 Ulm, Germany  
www.wieland.de

<sup>1</sup> Integrated into Aurubis  
from 1/04/2009

## **ECI DIRECTORS**

**Chairman** – *Javier Targhetta* – Freeport McMoRan

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**European Copper Institute**

Avenue de Tervueren 168, b 10 – B-1150 Brussels, Belgium

Phone: (32-2) 777-7070 – Fax: (32-2) 777-7079 – [eci@eurocopper.org](mailto:eci@eurocopper.org) – [www.eurocopper.org](http://www.eurocopper.org)