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# **ANNUAL REPORT 2010**

**EUROPEAN COPPER INSTITUTE**

The background features a complex geometric design. A large white shape, resembling a stylized 'V' or a series of overlapping planes, is set against a light grey background. This white shape is bordered by two parallel orange lines that run diagonally across the page. The bottom corners of the page are filled with a solid orange color, creating a sharp contrast with the white and grey areas above.

**Copper has been with us for thousands of years and still has much more to offer, for example in the fight against life-threatening bacteria, or to help increase energy efficiency, to make transport systems more sustainable and in the advancement of renewable energy.**

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## ECI VISION

*Inspiring Europe about copper's essentiality for health, technology and quality of life.*

## ECI MISSION

*The European Copper Institute 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 Brussels-based office and a network of eleven Copper Development Associations.*

## CHAIRMAN'S MESSAGE ON THE ROAD TO RECOVERY

2010 was a year of recovery in the copper business. Based on the most recent data from the International Copper Study Group<sup>1</sup>, European refined copper usage reached 4.18 million tonnes, up 8.7% from the depressed demand in 2009. With a close correlation between economic growth and copper usage, world demand reached 19.3 million tonnes, up 6.8% on 2009.

To support this global growth, refined production grew by 4.4%. However, this has been insufficient to keep up with demand and stocks held on the various metal exchanges have decreased by around 150,000 tonnes since the end of 2009.

This supply shortfall, coupled with strong global investor confidence in commodities, has had a very significant impact on metal prices. On the London Metal Exchange, the 2010 average copper price, of 7,539 \$/T, was up 46% over the 2009 level of 5,163 \$/T.

Higher prices are helping to support multi-billion € investments, especially in South America, Africa and parts of Asia, to enable the mining industry to meet future demand.

These same price levels, however, present very significant financial and financing challenges for the smelter/refiners, the semi-fabricators and copper users further down the value chain. As a result, an increasing number of markets are facing substitution. On the plus side, copper's superior conductivity performance continues to matter in sectors focused on improving electrical energy efficiency, electrifying transport and facilitating renewable heating and cooling.

We were pleased to see the European Commission investigate issues critical to the future competitiveness of the European industry. Given that 1.2 million tonnes (32%) of EU copper demand are met through imports, policies that support competitive access to raw materials, including the criteria for end-of-waste, are extremely important.

To maintain a level playing field, relative to producers in other regions, the European industry needs to receive adequate compensation, for both direct and indirect emissions, under the Emissions Trading Scheme. This will enable our industry to continue investing in the development of copper products required to achieve a lower carbon economy.

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



**Werner T. Traa**  
Member of the Executive Board  
Wieland-Werke AG

<sup>1</sup> The International Copper Study Group (ICSG) is an inter-governmental organisation, based in Lisbon, which publishes copper production and demand statistics. Visit [www.icsg.org](http://www.icsg.org) for more details.





## CHIEF EXECUTIVE'S MESSAGE **SUPPORTING SUSTAINABLE GROWTH**



**John Schonenberger**  
Chief Executive  
European Copper Institute

The responsible use of energy remains a primary concern for governments around the world. In the EU, top priorities are security of supply and progress towards achieving the 2020 targets of 20% energy from renewables, a 20% reduction in CO<sub>2</sub> emissions and a 20% reduction in energy consumption, achieved through savings and efficiency.

Eco-design studies have contributed to a considerable improvement in the performance of energy using equipment and systems. They demonstrate that the use phase of equipment, such as electric motors and transformers, accounts for over 95% of the economic and environmental impact throughout their overall life cycle. Copper's superior electrical conductivity helps drive higher energy efficiency, not only in more traditional industrial and infrastructure usage, but also in cutting-edge technologies such as electric vehicles and heat pumps.

ECI is a founding member of both the Energy Efficiency Industrial Forum and the Coalition for Energy Savings. Both of these alliances focus on demonstrating that energy efficiency is one of the most cost effective ways to address the social, economic and environmental challenges facing the EU. The Commission has recently reported that Europe is on course to achieve just 50% of its 2020 energy efficiency target. Whilst economically viable products and technologies, that can deliver the necessary efficiency gains, are available now, stronger political leadership and ambition are needed to materialise them.

Based on clinical trials, which showed a more than 95% reduction in the presence of harmful pathogens, such as MRSA (Methicillin-resistant *Staphylococcus aureus*), on copper touch surfaces in the healthcare environment, we launched the global brand Antimicrobial Copper Cu+. We are grateful for the strong support of partners in the hardware sector which led to several hospitals and residential care homes, around the world, installing copper and alloy fixtures and fittings. Further outreach is planned for the World Health Day on April 7<sup>th</sup> 2011.

In addition to our promotional activities, which you can discover more about in this report, ECI is fully involved in the many regulatory issues impacting the European copper industry. As examples, we managed the Consortium that enabled the industry to meet its REACH registration obligations and coordinated the complex data inputs required to assist the Commission in its work on the Raw Materials Initiative and on the Competitiveness of the non-ferrous metals industry.

In a further effort to link the value that copper products can deliver, with the industry that supplies them, ECI organised an exhibition in the European Parliament and hosted a half day debate, during which it launched the copper industry Manifesto, which can be found on page 18. Over 3,000 people visited the three day exhibition "Copper - Essential for Everyone".



# HIGHLIGHTS

Throughout 2010, ECI continued its activities to promote and publicise the beneficial properties of copper. In many markets, including energy and electricity, healthcare and building construction, the performance of copper containing products and systems will help to address today's social, economic and environmental challenges.

## TAKE A BRIEF LOOK AT...

**HEALTH AND ENVIRONMENT**

**ENERGY AND ELECTRICITY**

**BUILDING CONSTRUCTION**

**INDUSTRIAL VALUE CHAIN**

**COMMUNICATIONS AND PUBLIC AFFAIRS**

**REGULATORY AFFAIRS**

# HEALTH AND ENVIRONMENT

## BUILDING REASSURANCE

Europe plays an important, if not leading, role in supporting innovation and introducing policies that combat climate change, lower the carbon content of energy, deliver cleaner transport, conserve resources and reduce waste. Sustainable, durable and versatile, copper plays a crucial part in helping the EU achieve its objectives in these areas. In addition, it is one of the few materials that can be recycled indefinitely, without any loss of performance or properties.

### REACHing the registration deadline

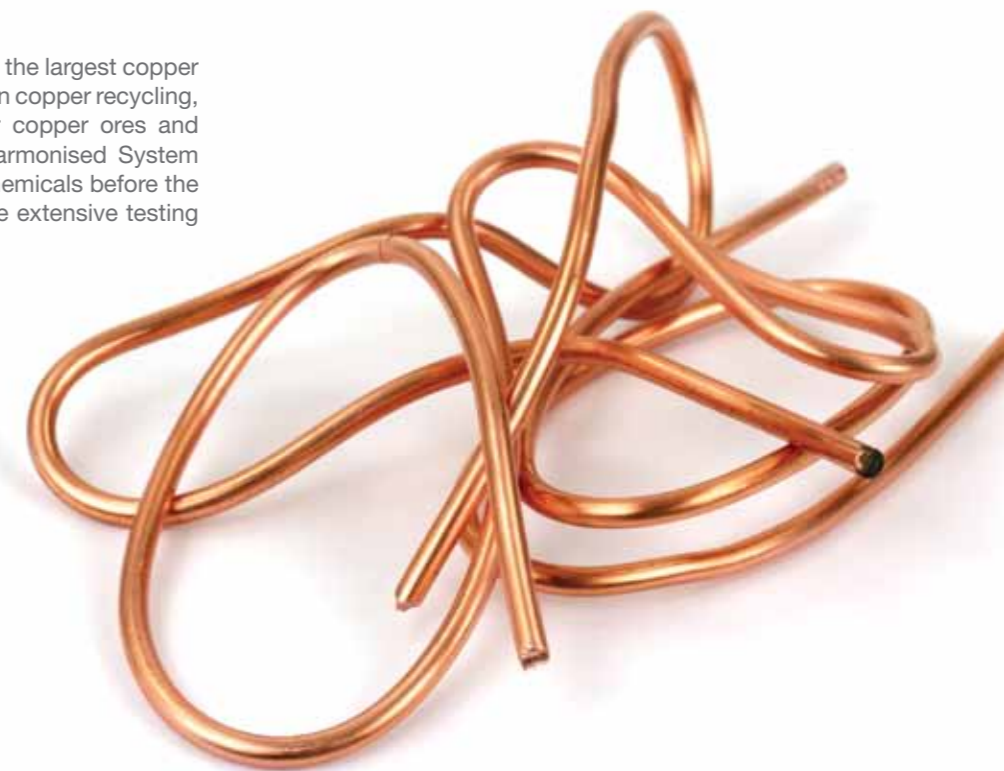
For the past three years, ECI has led the members of the REACH Copper Consortium towards the successful registration of 14 substances (copper, copper slags and 12 intermediates) under the European Union's REACH regulation. Covering the safe manufacture, use and end of life of chemicals, the required dossiers were electronically submitted to the European Chemicals Agency well ahead of the 30<sup>th</sup> November deadline. ECI's website provided information on how non-members could obtain Letters of Access to the dossiers for a fair fee. To support individual legal entity registrations, ECI provided all Consortium members with the required security tokens and step-by-step registration instructions.

On behalf of the global industry, Aurubis, the largest copper producer in Europe and the world leader in copper recycling, successfully submitted notifications for copper ores and concentrates under the EU's Global Harmonised System for the Classification and Labelling of Chemicals before the December deadline. ECI coordinated the extensive testing

and data analysis of over one hundred concentrate sources required to prepare the scientifically correct classifications. GHS is a United Nations system, introduced in 2009, to identify hazardous chemicals and inform users through the use of standard symbols and phrases on packaging labels.

### A clear position on recycling

Recycling requires just one fifth of the energy used in primary production and, in 2009, recycling supplied 40% of EU copper demand. The combination means that the copper recycled in Europe reduces the EU's CO<sub>2</sub> burden by around 650,000 tonnes per year. Despite this, over the last ten years, the EU has moved from being a balanced importer/exporter of copper scrap/end-of-life/waste materials, to a net exporter of 900,000 tonnes per year. ECI believes that the proposed end-of-waste criteria (where copper and alloy scrap meeting these criteria will cease to be a waste and become a substance under REACH) could actually go against the European Commission's declared intention to support EU recycling. ECI has issued a clear advocacy position for use at EU and Member State level.



# ENERGY AND ELECTRICITY

## DRIVING SUSTAINABLE GROWTH

### Prioritising energy efficiency

Supported by ECI's advocacy efforts through the Energy Efficiency Industrial Forum and the Coalition for Energy Savings, energy efficiency is a high priority in two recent European Commission documents: "Energy 2020 - A Strategy for competitive, sustainable and secure energy" which focuses on how savings could be delivered from existing technology, as well as on the technical innovation and investment required to achieve a competitive and low-carbon energy system; and "Energy infrastructure priorities for 2020 and beyond," which foresees an investment of around €1 trillion, over the next ten years, to address structural changes in the supply of high-efficiency energy.

### A continuing debate on water quality standards

The consideration of copper, as a candidate for the EU's second list of priority substances for surface waters, implies that control and further emission reductions are required. Based on data from ECI's risk assessment, the Commission and Member States technical experts removed copper from the priority list, although the issue remains under political review.

The European Scientific Committee for Health and Environmental Risk (SCHER) evaluated the Commission's guidelines on setting environmental quality criteria for European surface waters. SCHER endorsed the inclusion of bioavailability when checking metal level compliance. This further strengthens the applicability of the copper bioavailability models, developed as part of ECI's Health & Environment program from 2000 - 2006.

The European energy market continues to evolve, e.g. through growth in renewables and distributed generation, as well as through efforts to strengthen interconnections between the EU's main supply points and end user markets. Copper is present in almost all the technologies required and ECI's Leonardo ENERGY platform, aimed at sustainable energy professionals, emphasises the important benefits delivered by copper products.

### Supporting efficiency gains in electricity using equipment

The 2009 adoption of minimum efficiency performance standards for motors, under the EU Energy Using Products Directive, is boosting market demand for higher efficiency motors. An earlier ECI study estimated that full implementation of these MEPS will deliver electricity savings of about 135 TWh per year (more than the combined annual electricity consumption of Finland and Greece) and avoid 63 million tonnes per year of CO<sub>2</sub> emissions. The increased copper intensity of these motor systems is expected to add 70,000 tonnes of demand between now and 2014.

In 2010, ECI intelligence showed that few companies operate a Motor Management Policy to repair or replace motors before they fail. Case studies and a model were created to quantify the benefits of early replacement, based on a Total Cost of Ownership.

ECI has been one of the most active participants in the equivalent process for voltage transformers. Implementing measures have been proposed to the Member State regulatory committee for review.

ECI was also consulted during the creation of the new regulation on lighting components, which came into force in April 2010. The previous directive set a maximum input power for the combined lamp plus ballast, while the new regulation stipulates separate minimum efficiencies. This is estimated to expand the market share for copper containing magnetic ballasts from around 20 up to 50%. To counter a misperception, by many installers, that the new regulation is, in fact, intended to phase out magnetic ballasts, ECI started an educational campaign consisting of internet tutorials and presentations at industry events.

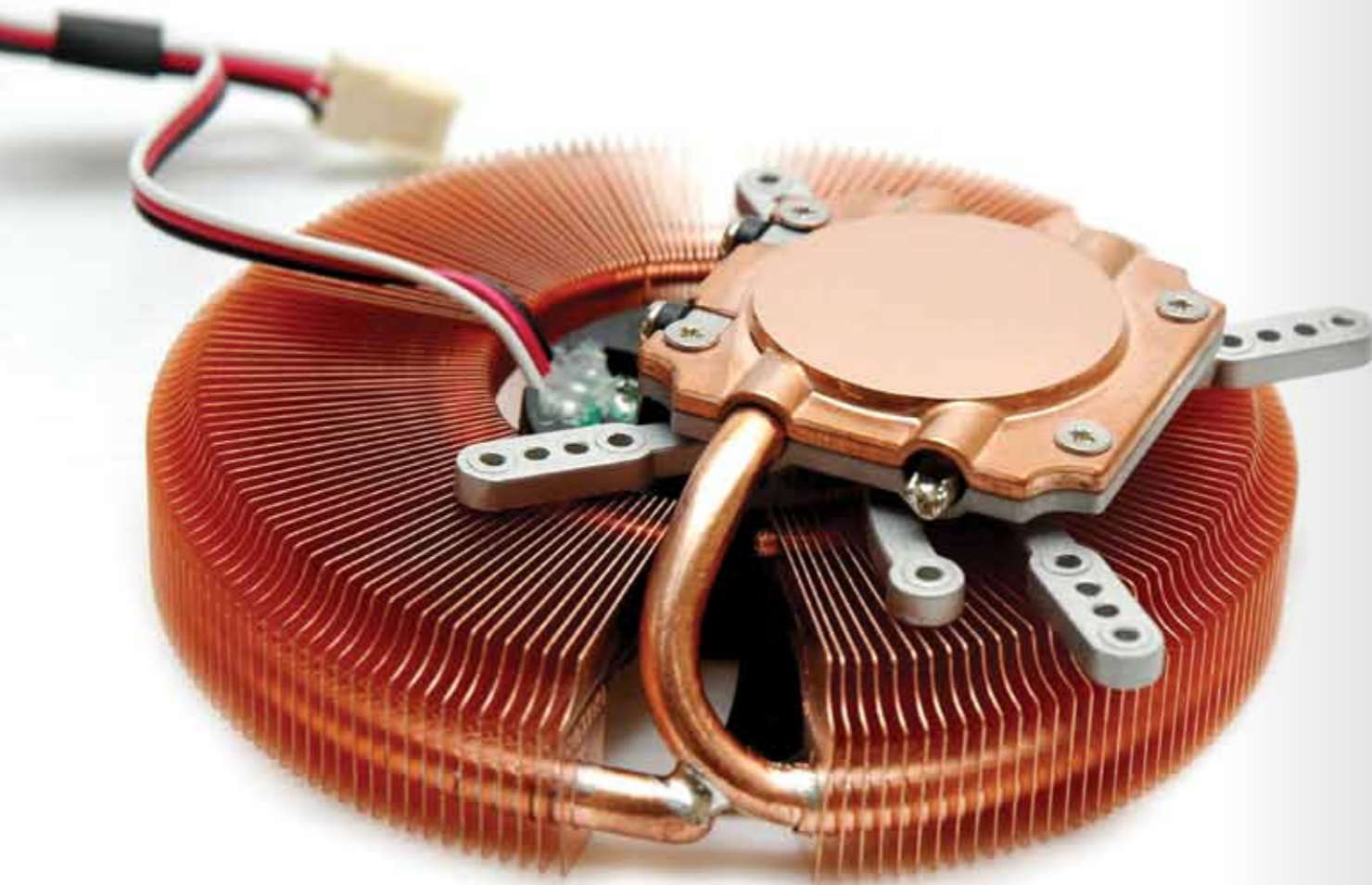




## Mapping the high potential of renewables

Driven by the EU's 20% target in 2020, the renewable energy market must continue on a strong growth path. Since most renewable technologies are highly copper intensive, ECI conducted various surveys on market and technology trends to support its members in capacity planning and to facilitate the development of communication messages that defend and promote copper usage. As examples:

- Copper usage in photovoltaic systems varies widely according to the installation topology, with an average of 4 - 5 tonnes per megawatt. This represents a global market for copper of 50,000 tonnes per year for the next five years.
- Solar thermal electricity technologies use approximately 4 tonnes per megawatt, representing an annual copper usage of 17,000 tonnes per year globally over the next five years.
- Annual copper usage in wind generators in Europe is currently 10,000 tonnes and is expected to increase to 20,000 tonnes per year by 2020. Copper is mainly used in gearless synchronous generators, which require 2 - 4 tonnes per megawatt. Geared technologies use 0.4 - 0.6 tonnes per megawatt.
- Over the next five years, onshore wind farms in Europe will use 6,000 to 10,000 tonnes of copper per year for low voltage cabling and earthing, with offshore wind farms expected to use 10,000 - 15,000 tonnes of copper per year.



## Training through e-learning

Leonardo ENERGY launched its online academy providing complete learning paths leading to exams and certification. Over 1,000 students enrolled during this first year. Two courses were delivered on power quality, an introductory course and one more specialised on harmonics. Additional courses will be developed on the various aspects of power quality, distributed generation, energy efficiency and renewable energy.

Leonardo ENERGY also continued organising *ad hoc* training webinars, which reached an unprecedented number of participants. Ten training webinars on Concentrated Solar Power (CSP) attracted nearly 2,500 professionals. Attendees came from different backgrounds, including financing, utility companies and NGOs. The sessions played an important role in expanding CSP awareness to a more general business audience.

A course of six webinars on photovoltaics proved even more popular, with more than 3,500 registrations and 30,000 visits to the presentation materials in just two months. Through these webinars, ECI is expanding the knowledge of a community of professionals who will be instrumental in designing future energy generation, distribution and usage systems.

## Improving electrical safety

There was also considerable activity in the domain of electrical safety, including the re-launch of the European Forum for Domestic Electric Safety (FEEDS). The platform's main goal is to encourage a European regulation on the periodic inspection of electric installations in buildings. Its actions reflect the Commission's Electra Communication, which acknowledges the growing role of electricity in buildings and the inadequacy of safety of electric installations to meet this new role. ECI is one of the key drivers behind FEEDS, which brings together a number of industry stakeholders, copper, wire and cables component manufacturers and installers, with a total turnover of €100 billion.

With an increasing number of countries now implementing mandatory inspections of electric installations, ECI is expanding its messages on this topic. Leonardo ENERGY published a whitepaper aimed at the building industry, policy makers and electrical installers. For the first time, this document emphasised the importance of carrying out cable measurements, as well as visual inspections. It also stressed the dangers of worn-out cables and referred to the potential weaknesses of aluminium cables.

The conclusions of this whitepaper were widely accepted by the international audience at the FISUEL (International Federation for the Safety of Electricity Users) meeting in Riyadh. Following this, FISUEL invited ICA to contribute to discussions on electrical safety in the Kingdom of Saudi Arabia and at the Gulf Cooperation Council. It will be the first time that ICA takes part in activities in this part of the world.

# BUILDING CONSTRUCTION

## EXPANDING OPPORTUNITIES

Credit availability, plus difficult winter weather conditions at both ends of 2010, affected building construction activity across Europe. Eurostat reports a 4.5% decline in the EU 27 Construction Index versus 2009.

In the plumbing, heating and architecture sectors, copper demand was further impacted by competing solutions and concerns over volatility in material prices. While shipments did improve in the second half of the year, the current, relatively high cost of material is a challenge to the semi-fabricating industry and its customers.

ECI contributed to the debate on European construction policy. Via its Regulatory Affairs Task Force, representations were made on several sustainability and environmental issues. These were based on the conclusions from ECI's copper risk assessment, which examined the impact of copper products on the environment and human health, along with our life cycle and recycling datasets.

### Introducing the Antimicrobial Copper Cu+ brand

With health care associated infections resulting in 37,000 EU deaths per year, one of our most important actions was the launch of the Antimicrobial Copper Cu+ brand. Backed up by peer-reviewed science and clinical trials from around the world, this new brand positions copper as "The World's Most Effective Antimicrobial Touch Surface Material". Our outreach, via the global website [www.antimicrobialcopper.com](http://www.antimicrobialcopper.com), national launch events and press communications, has been met with strong interest from the media, from the health care profession and from product manufacturers. For further details on national activities, please refer to pages 24-29.

### Inspiring copper in architecture

Our campaign website [www.copperconcept.org](http://www.copperconcept.org) contains an extensive repository of copper in external architectural installations from all across Europe. Visiting architects can gain both inspiration from their colleagues, as well as obtain the latest technical and environmental information on copper. The 29<sup>th</sup> edition of our Copper Architecture Forum was published in 13 languages, with 26,300 copies distributed in 16 countries. A highlighted article was an exclusive interview with the 2010 Pritzker Architecture Prize winner, Ryue Nishizawa. The Spanish winner of the 2009 European Copper in Architecture Awards spoke at a well attended conference organised by the Architects' Association of Madrid.

### Supporting the solar thermal sector

ECI actively participated in the solar industry's efforts to establish solar as a credible source of heating and cooling by running policy and technical workshops, and developing a knowledge management portal and newsletter. ECI also plays a key role in the development of the European Technology Platform on Renewable Heating and Cooling.

### Raising awareness of end users

Promoting the many benefits of using copper installations in the built environment, directly to building owners, generated important interest. Preparations are well underway to expand the German pilot into other national campaigns in 2011. The campaign will include broad messaging on plumbing, architecture, solar thermal and Antimicrobial Copper applications.

### Meeting local market needs

ECI's Building Construction program maintained high standards in national communications and marketing via a variety of tools, including training courses for young plumbers and architects, press advertising, publications and school education kits. One important example was the update of national language versions of "Ten Good Reasons to Use Copper in Plumbing Installations".

# INDUSTRIAL VALUE CHAIN

## INNOVATING FOR FUTURE SUCCESS

Overall economic pressures, the need to reduce the intensity of material usage and high relative material costs increased ECI's efforts to support the value chain with improving resource efficiency, recycling and understanding long-term environmental impacts.

### Getting into the MicroGroove™

Copper tubes used in the air-conditioning market have been under threat following the introduction of aluminium micro-channel. ICA's Technology team in China identified that smaller diameter copper tubes could, in fact, offer better performance. MicroGroove™ copper tubing was presented at a 2010 aircon conference in Italy and Lu-ve, an Italian manufacturer of heat exchangers, launched a new miniaturised heat exchanger, using small diameter copper tubes. ECI provided brochures and press releases about the benefits, which include resource and energy efficiency, as well as a lower refrigerant charge. For further details, visit [www.microgroove.net](http://www.microgroove.net).

### Diving into aquaculture

In October, ECI and three leading copper alloy producers, Wieland, Luvata and Mitsubishi, exhibited copper alloys at the Aquaculture Europe Tradeshow in Portugal. 2,000 people from across the fish-farming industry supply chain visited ECI's stand which emphasised the benefits of various copper-based systems and provided a business case to support the sustainable development of increased aquaculture production in Europe.

Under the theme, 'Increasing Productivity, Sustaining the Future', the stand displayed three fully-recyclable copper alloys available for use in aquaculture, copper zinc, copper silicon and copper nickel, with service lives of five or more years. Each provides good overall resistance to corrosion and abrasion, plus a natural strength that helps maintain net volumes, exclude predators and prevent escapes. It was also demonstrated that copper-alloy containment systems naturally inhibit biofouling, thus increasing water flow and oxygenation, improving fish health and production, and reduce the need for antibiotics and cage maintenance. Brochures, posters, presentations and videos of copper usage in the aquaculture sector can be found at <http://www.eurocopper.org/copper/aquaculture.html>

### Driving copper usage in electric vehicles

In the automotive sector, continued interest in electric vehicles is driving advances in motor design and supporting technologies. ECI gave a presentation at the 'Electric Vehicle Unplugged 2010' event, which took place at the House of Lords in London, showing the performance benefits for copper usage in electric vehicles and their infrastructure. ECI estimates that copper usage in a vehicle could increase by 33 kilograms for propulsion, energy storage, cooling and control systems.



# COMMUNICATIONS AND PUBLIC AFFAIRS

## MAKING A POSITIVE IMPACT

### Copper - essential for everyone

ECI continued its communications campaign throughout 2010 with a broad range of media relations and public affairs activities.

Our three day exhibition in the European Parliament, Copper - Essential for Everyone, which showcased the vital role that copper plays in mankind's journey into the future, was a milestone for the copper industry, attracting more than 3,000 visitors. At a panel debate linked to the exhibition, ECI published its Manifesto for a competitive European copper industry. For further details, see pages 18 and 19.

The June event, also designed to raise awareness about the most important policy issues facing the copper industry, has helped to create stronger links with EU officials. We followed up on the event by supporting the publishing of a Copper Supplement in cooperation with the Parliament Magazine. In one item, Member of Parliament Piotr Borys stated that "Copper - Essential for Everyone set a new standard and actually raised the bar for future exhibitions in the European Parliament." Later in the 4<sup>th</sup> quarter, the first edition of our new electronic newsletter Copper Wire was sent to EU policy influencers and decision makers.

We followed up our 2009 "Imagine life without" film with the publication of a new brochure entitled 'Curious about Copper'. This provides an easy way to learn more about what copper is used for, where it comes from, as well as the industry behind it. It is currently available in both English and Spanish.

The decision by the Irish hospital, St. Francis's, believed to be one of the first facilities to specify antimicrobial copper door furniture in Europe, was publicised. The press release, explaining that the decision was taken in a bid to reduce hospital-acquired infections, received wide European media coverage, along with requests for follow-up stories and interviews.

Press releases covering the installation of copper air ducts in a Greek office complex, the launch of the Antimicrobial Copper website, the positive increase in copper recycling rates and multiple messaging on energy efficiency,



achieved regular media attention. An NDM-1 (New Delhi metallo-beta-lactamase) scare provided an opportunity for Professor Keevil, microbiological researcher and Head of Environmental Research at the UK's University of Southampton, to suggest that "copper is likely to eliminate the new 'superbug' in the same way it does other organisms". This resulted in coverage in key healthcare titles, such as MedTech Insider, Building Better Healthcare and Healthcare Equipment & Supplies.

The German CDA carried out an image survey to assess the current image of copper with the general public. As was done in 1998 and 2004, the survey involved random telephone interviews with 1,000 individuals over the age of 14. The results showed that most Germans are able to spontaneously name a wide variety of applications for copper. For the first time, respondents were asked how they thought the importance of copper would develop in the future. A clear majority, 58%, responded that copper will become more important for wires and cables than it is today. Eight out of ten respondents also agreed that copper is indispensable for today's society, demonstrating the positive impact that our communications are having in explaining the benefits of copper products.

# INDUSTRY MANIFESTO

## 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 timeframe, 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<sub>2</sub> emissions and adequate compensation for indirect CO<sub>2</sub> 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 percent 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 lifecycle methodologies in impact assessments

The production of copper requires energy. On average, one tonne of primary copper results in a one-time emission of three tonnes of CO<sub>2</sub>. 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<sub>2</sub> 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 lifetime 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 (best available techniques), risk assessment conclusions and REACH standards are demonstrated, through balanced, scientific and economic analysis, before any such standards are set.



# COPPER - ESSENTIAL FOR EVERYONE

## STRIKING A DELICATE BALANCE

More than 3,000 representatives from the EU institutions, the copper industry, the downstream value chain and the media attended ECI's three day exhibition in the European Parliament designed to showcase the crucial role copper plays in our everyday lives. The event opened with a panel debate entitled, 'European industrial policy – striking a balance', co-hosted by MEPs Piotr Borys and Jacek Protasiewicz. Speakers included head of service in the Commission's Environment Directorate, Pavel Misiga; Aurubis Chief Executive, Bernd Drouven; European Climate Foundation Chief Operating Officer, Patty Fong and

Javier Uriarte, General Director of Marketing and President of ENDESA Energia.

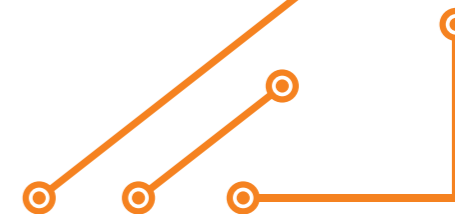
The panel discussed ideas on how to achieve an appropriate balance between EU policies that focus on sustainability and resource efficiency and those necessary to maintain a competitive business environment in Europe.

Highlighting the role the copper industry plays in supporting Europe's sustainability goals, Jacek Protasiewicz said, *"The EU's 20-20-20 targets cannot be met without the increased use of copper products, for example in electric motors, wind farms and solar panels. We need a strong European copper industry to develop innovative technologies and to strengthen Europe's competitiveness. That's the reason why we need to strike the balance between promoting competitiveness and EU regulations."* Justin Roux, a Senior Vice President with Luvata, a major copper manufacturer, noted, *"Copper is essential for everyone – there is no doubt about that. It was the first metal we ever started working with and it's in more aspects of our world today than any other metal. When we look to the future, we can see that a more responsible human population will not be able to function without it."*

Referring to the copper industry as an important source of employment, Piotr Borys, stated, *"My home region, Lower Silesia in Poland has one of the EU's largest copper deposits and employs 100,000 people. Copper is crucial for Lower Silesia and also for Poland and the EU as a whole."* This message was echoed by European Parliament President, Jerzy Buzek who said, *"Copper, let us recall, is not only a source of energy, but also employment, supporting jobs in Poland and across the EU."* And he went on to add that, *"It is good for health, supporting the development of healthy teeth and healthy bones, and also helps carry oxygen in our blood."*

According to Buzek, no serious political debate could take place in Europe without including a discussion about the contribution the copper industry can make to the European economy.

In support of the debate, ECI published its Manifesto for a competitive European copper industry. Discussions continue at [www.essentialforeveryone.eu](http://www.essentialforeveryone.eu).





# REGULATORY AFFAIRS

## STAYING AHEAD OF THE CURVE

ECI adopts a proactive and cooperative approach with respect to legislation and policies affecting the copper industry and its markets.

### Realising REACH

ECI managed the REACH Copper Consortium's efforts to successfully register 14 substances (copper, copper slags and 12 intermediates) under the European Union's REACH regulation. The required dossiers were submitted electronically to the European Chemicals Agency well before the November 30 deadline. To support individual legal entity registrations, ECI provided all Consortium members and Letter of Access customers with the required security tokens and step-by-step registration instructions.

### Be cautious on End-of-waste criteria

ECI contributed to the Commission's proposals on new end-of-waste criteria for copper and copper alloy scrap. Key parameters are the allowable percentage of foreign materials and the methods to monitor this. The higher the percentage, the higher the risk of hazardous substances impacting the health of workers in regions with lower health and environment standards. Recently, the Commission has proposed a 2 - 5% range for decision by the Member States. Even at 2%, around 1 million tonnes of high and medium quality scrap could be reclassified from waste to a product. Monitoring is foreseen to be based on visual inspection, reinforced by periodic analysis, which cannot guarantee compliance with the criteria. The European copper industry believes it is impossible to foresee the impact of the EoW and thus it would be wiser to err on the side of caution, adopting a lower percentage, stronger monitoring guidelines, stronger enforcement rules and a 2-3 year monitoring period.

### Emission Trading Scheme impacts global competitiveness

ECI collected and analysed industry electricity consumption data to support its Emissions Trading Scheme (ETS) advocacy. The data was used to simulate the cost impact of the 6% reduction factor proposed by the Commission for process emissions. In its latest draft, the reduction factor has been lowered to 3.

However, important issues remain regarding compensation for indirect emissions, which arise out of the CO<sub>2</sub> indirectly emitted due to the industry's energy consumption. The Commission's desire to minimise direct compensation will impact the competitiveness of energy-intensive industries. This issue is particularly acute for European copper producers, where energy accounts for +/- 25% of operating costs, and where any cost burden cannot be passed on to customers due to metal prices being set globally on international commodity exchanges. ECI and its members are continuing to communicate its concerns to Commission officials and the key Member States and are requesting full financial compensation for these indirect costs until similar burdens are faced by producers elsewhere in the world.

### Studying non-ferrous metals

At the end of 2009, the European Commission funded a study on the "Competitiveness of the EU Non-Ferrous Metals Industries". ECI believes the final draft appropriately reflects the European copper industry's specificities and challenges, such as long term electricity contracts; metal prices that are global, whereas operating costs are local; the costs of higher environmental standards; plus competitive access to raw materials and scrap.

However, two key issues remain:

1. It is not true to say that there is "substantial excess capacity in main sub-sectors such as [...] copper". Quite the opposite is the case, as the capacity of copper refinery production (average 2000 - 2008) meets only 62% of refined demand. To compensate, the EU imports significant amount of concentrates (+/- 3.5 million tonnes per year) and of refined copper (+/- 1.5 million tonnes per year).
2. More emphasis is needed to secure competitive access to secondary raw materials. The recycling of scrap, which meets 40% of EU demand, is significantly less energy and CO<sub>2</sub> intensive than primary production. Therefore it is of strategic importance to retain the scrap recovered in Europe and to recycle it within the European market.

The final report is expected be released in 2011 and will be an important reference for future policies.

### Building a sustainable society

One of the most important changes in 2010 was a political shift towards the recognition that industry has a key role to play in building a future European sustainable society. Industry will have a notable role to play in at least three (out of the seven) so-called flagship EU 2020 initiatives:

1. The development of an industrial policy for the globalisation era to improve the business environment, especially for SMEs, and to support the development of a strong and sustainable industrial base able to compete globally.
2. The encouragement of a resource-efficient Europe to help decouple economic growth from the use of resources, by decarbonising the economy, increasing the use of renewable sources, modernising the transport sector and promoting energy efficiency.
3. The creation of an innovation Union to improve framework conditions and access to finance for research and innovation, so as to strengthen the innovation chain and boost levels of investment throughout the Union.





# NATIONAL ACHIEVEMENTS

## Benelux – Copper Benelux

We continued tracking the latest scientific knowledge on Legionella and biofilm in plumbing systems and were present at a number of high-profile events, including a 'Biofilm and Health' seminar at the University of Poitiers (France) and Legionella congresses in London (UK) and Antwerp (Belgium). We also organised seminars for students and professors at Antwerp University on these topics.

Our participation in Health Care Brussels, an exhibition of materials, products and services for the healthcare industry, was successful with one hardware manufacturer agreeing to promote products bearing the new Antimicrobial Copper Cu+ brand.

We launched a review of the technical guidelines that govern the use of copper tubes in drinking water installations. These guidelines, which are closely adhered to by plumbers in the Benelux region, provide the very latest technical information on tubes and fittings. The 'Thermal Solar Systems' document was translated into Dutch and added to our website.

We also made significant contributions to the update of two pan-European promotional documents: "10 good reasons to use copper tubes and fittings" and "10 good reasons to use copper roofs and gutters". The Copper Forum architectural publication was sent to 2,000 architects and 100 buildings, featuring copper roofs and facades, were added to the Benelux section of [www.copperconcept.org](http://www.copperconcept.org).

## France – Centre d'Information du Cuivre

Our most important event was the successful launch of the Antimicrobial Copper Cu+ brand. As a result of meetings and contacts made at the four-day Hôpital Expo event, stronger emphasis was brought to the project that has led to opportunities for installations.

In the building construction sector, our campaign efforts concentrated on the promotion of under floor heating and the use of copper tubes in healthcare facilities. An updated edition of the "Solar for Thermal Applications" publication, plus two issues of Copper Forum, were distributed. Our communication efforts and media relations activities reached more than 24 million people.

We re-launched our residential safety campaign and reactivated the GRESEL platform. This is focusing on the safety and performance benefits of inspecting, and then renovating, the electrical installations in the communal parts of residential buildings.

We were also very active in the electrical & energy sector with a steadily growing number of visits and well-attended webinars, held in cooperation with the Association of Environmental and Resource Economists. Finally, we established a new partnership with the publisher Delagrave Editions to distribute our publications.

## Germany – Deutsches Kupferinstitut e.V.

There was a considerable increase in the number of requests for our consultancy services, particularly from large downstream industrial users of copper. Participation in our seminar program for industrial users also grew substantially. Our management of an ICA Technology project, aimed at updating knowledge on copper and copper alloy machining, was completed, with a results brochure available in both German and English.

Our antimicrobial activities focused mainly on launching the Antimicrobial Copper Cu+ brand in Germany and coordinating and supporting its rollout across the European

CDA network. We had a number of noteworthy successes, including the introduction, by one of Germany's major players, of antimicrobial light switches at the international Light & Building trade show in Frankfurt. The first ever presence of an alliance of antimicrobial copper hardware producers, along with the German CDA, at MEDICA 2010, the world's largest medical and infection trade show, is also worthy of mention.

The pilot phase of the End-User Campaign, focused on communicating to home owners the benefits of using copper in their homes, was concluded and judged a success. The effort is now being expanded to cover copper's benefits in a broader number of residential applications. The German pilot is also forming the basis to extend the campaign into other major European markets.

## Greece – Hellenic Copper Development Institute

We initiated our antimicrobial program with a successful one day "It's Copper Time" event, which brought together scientists and doctors. We also started a clinical trial in the intensive care unit of the country's Attikon University Hospital under the supervision of Dr. Eleni Giamarellou. This trial will test copper's antimicrobial efficiency in the nosocomial environment.

The Antimicrobial Copper Cu+ brand was promoted at Medic Expo 2010, a medical exhibition in Athens. At the event, we had contact with hardware manufacturers and explained the benefits of using the new Antimicrobial Copper Cu+ logo. Promotion of the brand continued through our website and via the distribution of English-language brochures.

The first copper air ducts in Greece were produced and installed in an office building in Athens. This achievement, publicised in our newsletter and on our website, reinforces the antimicrobial efficacy of copper in an internal heating and cooling environment. We appointed Dr. Panos Efstathiou, a well respected figure in the Greek health care sector, as a scientific advisor for our expanding antimicrobial promotional activities in Greece, Bulgaria and Cyprus.

The second annual young plumbers' competition attracted students from 17 schools. 60 entrants attended the prize giving, where the awards were presented and the benefits of copper for all sectors were promoted. In addition, more

than 100 seminars were held around the country reaching out to over 2,500 students. All communication activities, advocating the benefits of copper, are supported by our electronic and printed newsletters, plus through regular updates to our website.

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

Higher than average growth is expected for Central and Eastern Europe over the next few years. The building construction sector continues to offer good opportunities, particularly due to the substantial need for renovation and the shortage of new homes.

We provide a unique source of copper information for professionals and end users via local language websites in Hungary, Czech Republic, Slovakia and Romania. Visitor numbers grew by 66% to 179,000 for the national copper sites and to more than 87,000 for the architectural site [www.copperconcept.org](http://www.copperconcept.org). A new section, containing press releases and brochures on antimicrobial copper, has been added to each local language website. The region's first presentation on antimicrobial copper was given at an epidemiology convention in Hungary.

We had 44 articles on the versatile performance of copper published online and 13 in the trade press. Well attended seminars, focusing on renewable energies, showed that these technologies are of growing importance in the C&EE region.

Three events for architects provided promotional and environmental information on the use of copper in facades and roofs. The seventh annual student plumber competition had a record participation of 634 students from 68 schools. Finally, we continued our popular certification program for gas plumbers.



## Italy – Istituto Italiano del Rame

An important focus for us was sustainability in the national construction sector. One of our full day seminars, on bio-housing and building issues, was attended by 1,700 architects and technicians.

Copper's antimicrobial properties were heavily promoted through the publication of articles and press releases on clinical trials, seminars, additions to our website and the launch of the Antimicrobial Copper Cu+ brand. Already, two manufacturers have shown an interest in licensing the brand.

The "Copper and Home" awards were very successful, with more than a 100% increase in submissions versus the 2009 event. 350 projects, including some from students, were submitted from 16 countries. The winners will receive their awards at a ceremony to be held in the Palazzo della Triennale in Milan.

We continued to expand our internet presence through regular updates to our national, [www.iir.it](http://www.iir.it), and [www.copperindesign.org](http://www.copperindesign.org) sites, as well as the publication of electronic newsletters. We also uploaded educational presentations on copper applications to [www.slideshare.net](http://www.slideshare.net) for public use and created new entries in Wikipedia about copper and health.



## Poland – Polish Copper Promotion Centre

We organised an international Scientific Conference entitled 'Prevention of Hospital Infection' to launch the Antimicrobial Copper Cu+ brand in Poland. The event was held in cooperation with the Polish Hygienic Association and under the auspices of the country's General Sanitary Inspector and Rector of Poznan Medical University. More than 270 hospital medical staff, state sanitary inspectors and academics heard presentations from national experts and guest speakers from the UK. The event was widely reported on local and national media.

We launched a comprehensive Leonardo ENERGY e-learning course on Power Quality, comprising 10 modules. Already 1,000 users have taken advantage of this training. We also prepared a report on the periodic inspection system for domestic electrical systems in Poland. The report emphasises that the driving forces to improve electrical safety in the home are linked to users' attitudes, their economic situation and their general living conditions.

In the fourth quarter, we kicked off the development of national messages for the new Copper in the Built Environment campaign. This will build off the German pilot from 2009 and 2010. Preliminary ideas were shared with focus groups representative of our target audiences.



## Russia – National Copper Centre

Despite being a major gas market, copper products are not widely used in gas installations in Russia. In 2010, we completed a comprehensive copper-in-gas installation norm that will open the door for the use of modern press-fit connection technology and allow the use of less skilled labour. A key requirement was the endorsement and introduction of the press-fit connection method into the Federal gas fitting building norm. A change in the Government's official policy, at the end of October, indicated a move towards more long-lasting and reliable solutions in the engineering industry. This opens up opportunities for copper in applications that have been previously the domain of cheaper, lower performing materials.

The reputation of copper as a sustainable material suitable for a wide variety of applications in the home, such as gas fitting and solar-thermal solutions, was boosted significantly by the strong promotion of copper's antimicrobial properties and the launch of the global Antimicrobial Copper Cu+ brand. Copper's beneficial properties were publicised both towards professionals and the more general audience via a greater web presence that included a variety of visual tools and techniques. This has also helped us to reach end users and decisions makers more broadly across the country.





### Scandinavia – Scandinavia Copper Development Association

We started a project, in partnership with the Swedish Environment Institute, on urban copper flows and their fate. The first phase of the project involved the sampling and analysis of bioavailable copper in sediments found in Stockholm and then assessing their origin. The age of the sediment cores will also be determined. Once this has been completed, the copper content of storm waters will be measured. The initiative's aim is to get a clearer picture of the flows of copper in an urban environment, where the transportation of natural background levels, as well as the interaction of both fresh and salt water, play significant roles.

We made strong efforts to obtain greater acceptance of copper's use in building applications in Sweden. However, despite the positive, peer reviewed results from the EU approved risk assessment, we were unsuccessful in getting copper removed from the list of banned materials under the Nordic Swan eco-label for houses.

SCDA is taking the lead in promoting copper's performance attributes in EU programs on Green Public Procurement, Environmental Product Declarations and Eco-labelling.

The antimicrobial copper veterans' home trial was completed, with the positive results broadly communicated. Outreach to the Finnish media has so far resulted in the publication of three articles in professional magazines concerning HVAC, cleaning and maintenance. Background information on these topics was provided on relevant websites and via a Finnish language brochure.



### Spain – Centro Español de Información del Cobre

Following two years of intensive lobbying by the common interest platform PRIE, supported by us and other national associations interested in the electrical sector, the Spanish Parliament passed a law requiring electrical installations, in houses and buildings more than 15 years old, to be inspected and upgraded when they are sold or rented.

We continued our efforts to strengthen the image of copper in the building sector and make it more recognisable. Our efforts paid off with our website receiving more than 50,000 visitors and more than 15,000 copies of publications were distributed at seminars and exhibitions.

A trend was identified that indicates that more than half of the readers of Spanish media prefer online publications. We were able to increase our online presence in the media by more than 70%.

We also achieved success in the promotion of the antimicrobial properties of copper-touch surfaces. Not only did we have more than 170 articles published in the media, we also took part in radio and television interviews. The new Antimicrobial copper Cu+ brand was successfully launched at the Spanish Healthcare Engineering Congress.



### UK – Copper Development Association

As the lead market for the promotion of antimicrobial copper, we were present at a number of key infection control events. Exhibition stands showcasing products, including the first ones stamped with the new Antimicrobial Copper Cu+ brand, helped raise awareness in the infection control community. By year end, we had secured eight registrations for the Cu+ brand, one retrofit installation and further specifications at National Health Service hospitals. Our media activities reached more than 3 million architects, designers, infection control specialists and members of the public. We also adapted the international English section of our global website, [www.antimicrobialcopper.com](http://www.antimicrobialcopper.com), to showcase recent case studies, presentations, articles and brochures.

A series of 30 technical articles helped us gain broad coverage in the plumbing trade media. Subscriptions to the Copper Club rose by 25% and we promoted the use of copper in plumbing at trade events and environmental construction shows, such as Ecobuild and Greenbuild Expo.

Our "Be Curious" school poster competition attracted 190 entries from 27 schools. The winning poster highlighted copper's essentiality and will become a new educational resource across the country.

Our copper-nickel expert played an important role in supporting members in the European launch of new copper alloys for use in marine aquaculture cages. A three-day international exhibition in Portugal provided an excellent introduction to the key players in Europe.

# FACTS AND FIGURES

Throughout 2010, ECI and its network of eleven national Copper Development Associations operated with a budget of \$18.5 million (€13.4 million) for promotional and regulatory affairs activities across the region.

In addition, the European network's resources also managed a budget of \$5.4 million for projects aimed at positively impacting the global demand for copper.

The International Copper Association, representing the world's leading mining companies, independent smelter/refiners and semi-fabricators, provided 58% of the annual budget.

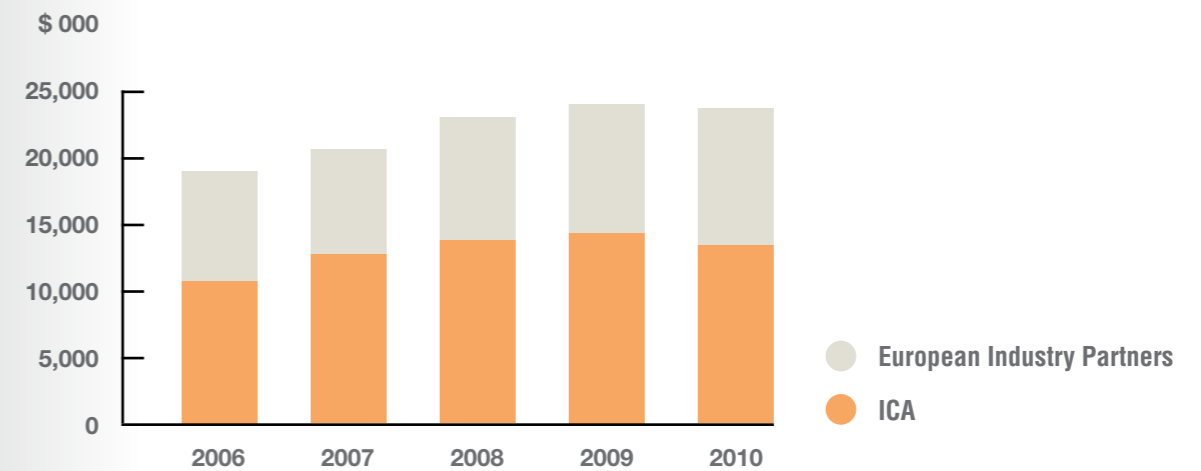
Over 100 partners, both academic institutions and industrial companies, continue to provide strong support for ECI's Leonardo ENERGY program, which broadly promotes the sustainable generation, distribution and usage of electrical energy.

This was the third year in which our efforts were boosted by a 2008 grant from the United Nations Global Environment Fund (GEF). The GEF awarded \$12 million to the International Copper Association (ICA) over a five-year period to promote the use of solar thermal energy technologies in six countries around the world (Albania, Algeria, Chile, India, Lebanon and Mexico).

## 2010 Funds (\$000)

Strategic Initiative	ICA	European Industry Partners	Total
Building Construction	5,400	5,100	10,500
Electricity and Energy	2,500	3,100	5,600
Industrial value chain	2,000	300	2,300
Market Intelligence	200	0	200
Renewables, Heating and Cooling	400	100	500
Health, Environment and Regulatory Affairs	1,100	700	1,800
Communications	900	100	1,000
Administration	1,400	600	2,000
<b>Total Funds</b>	<b>13,900</b>	<b>10,000</b>	<b>23,900</b>

## ECI Promotion Funds (2006-2010)



	ICA	European Industry Partners	Total
2006	10,820	9,090	19,910
2007	12,700	7,900	20,600
2008	14,000	9,300	23,300
2009	14,500	9,800	24,300
2010	13,900	10,000	23,900



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