LEAD AND ZINC FORECAST

The outlook for World supply and demand for lead and zinc was presented during the ILZSG Spring 2014 meeting held in Lisbon on 2 April 2014.

Highlights include:

- The global demand for refined lead metal will increase by 4.4% in 2014 to 11.73 million tonnes. This will be driven mainly by growth in China where usage is forecast to increase by 7.4%. In 2013, China accounted for 45.2% of total global lead usage. After increasing by 14.1% in 2013, demand in the United States is forecast to rise by a modest 0.6%. In Europe, a rise of 2.2% is anticipated driven mainly by a forecast recovery in Italian demand.

- Following a rise of 7.5% in 2013, global lead mine production is expected to increase by a further 5.2% to 5.66 million tonnes in 2014 primarily as a consequence of higher output in Australia and China.

- In 2014, world production of refined lead metal is forecast to rise by 4.3% to 11.68 million tonnes. Output in the Republic of Korea, currently the world’s third largest producer of lead metal behind China and the United States, is expected to rise by 5.7% to reach half a million tonnes. Elsewhere in Asia increases are forecast in China, India and Kazakhstan.

- It is expected that the world market for refined lead metal will remain in modest deficit in 2014 with the extent of the shortage estimated at 49,000 tonnes.

- It is anticipated that, after having risen by 4.9% in 2013, world usage of refined zinc metal will increase by 4.5% to 13.58 million tonnes this year. Usage in China, which accounts for 44% of total world zinc demand, is forecast to rise by 5.8%. In Europe and the United States, increases of 3% and 1.7% respectively are anticipated. Elsewhere further growth is forecast in India, the Republic of Korea and Turkey, however, demand in Japan is expected to remain similar to that in 2013.

- Global zinc mine production is predicted to rise by 2.6% to 13.57 million tonnes in 2014. This is mainly a consequence of further growth in Chinese output and increases in Australia driven primarily by increases in production at Glencore Xstrata’s Mount Isa and McArthur River operations and Perilya’s Broken Hill mine.

- After having remained relatively stable for the past four years Chinese production of refined zinc metal is expected to rise by 7.3% in 2014 and this is the main factor behind an anticipated overall increase in global production of 4.4% to 13.46 million tonnes.

- The latest forecasts indicate global demand for refined zinc metal will exceed supply in 2014. It is anticipated that the size of the deficit will be 117,000 tonnes.

For further details of the outcomes of the ILZSG meetings or questions on the market outlook please email Paul White at paul_white@ilzsg.org

NEXT STUDY GROUPS’ MEETING DATES

The dates for the next International Study Groups’ meetings are:

ILZSG: 16 - 17 Oct. 2014, Lisbon, Portugal

Joint Study Groups’ Seminar 9:00am to 5:30pm on 15 October 2014: “International Metals Recycling” Lisbon, Portugal

COPPER FORECAST

The International Copper Study Group (ICSG) met on 31 March - 1 April 2014 in Lisbon and reviewed the current outlook and trends in World copper supply and demand. The following forecast was issued:

- With anticipated recovery in the world economy global refined copper usage is forecast to grow by 3.2% in 2014 and a further 3.6% in 2015 to 22.7 million tonnes (Mt).

- After a period of underperformance, world mine production grew by 8% in 2013 compared with an average annual growth of 1.5% in the preceding 5 years. Although growth in 2013 was partially due to a recovery in production levels from constrained output in 2012, strong growth is expected to continue through 2015 owing to additional output from mine projects that were deferred during the financial crisis and expected to come on stream. World mine production is anticipated to grow by around 5% in 2014 and a further 7% in 2015 to 20.3 Mt.

In 2014 world refined copper production is expected to increase by 6.5% to 22.4 Mt compared with 2013 when output was constrained by a series of maintenance shutdowns. Refined production will benefit from adequate availability of concentrate (and to a lesser extent from expanded SX-EW capacity in Africa) offsetting expected tightness in the scrap market. In 2015, refined copper production is expected to grow further by 4.3% to 23.3 Mt.

According to ICSG projections for 2014, after four consecutive years of apparent deficits, the copper market could show a production surplus relative to demand. World production of refined copper is expected to exceed demand for refined copper by about 400,000 tonnes, as demand will lag behind the growth in production. For 2015, although growth in usage is anticipated to continue, another surplus could occur owing to an increase in refined output that exceeds the expected growth in usage.

For further details of the outcomes of the ICSG meetings or questions on the market outlook please e-mail ICSG Director of Market Research and Statistics Ana Rebelo at rebelo@icsg.org.

NICKEL FORECAST

The International Nickel Study Group (INSG) met on 3 and 4 April 2014 in Lisbon and reviewed the current outlook and trends in World nickel supply and demand. The following forecast was issued:

- Global primary nickel usage was 1.75 Mt in 2012 and 1.77 in 2013. For 2014 an increase to 1.89 Mt is expected.

- World primary refined nickel production was 1.75 Mt in 2012 and increased to 1.94 in 2013. Production is projected to be unchanged at 1.94 Mt in 2014. There is a degree of uncertainty in these figures in regard to Chinese nickel pig iron production. The 2014 figure does not include any adjustment factor for production disruptions.

- INSG members also discussed market trends. According to INSG data, a significant stock build was recorded in 2012 and 2013. Reasons include the number of new nickel projects that have started up, existing projects that have ramped up production, including nickel pig iron production in China, and disappointing usage figures outside of China and India.

INSG recognizes the significant impact of the current financial, economic and political uncertainty in many parts of the world. The effects of the above on both the supply and demand for nickel are not fully known. The Study Group cautions that future market developments could alter the forward-looking market balance.

For further details of the outcomes of the INSG meetings or questions on the market outlook please email Salvatore Pinizzotto at s.pinizzotto@insg.org.

JOINT STUDY GROUPS' SEMINAR

A Joint Study Groups' Seminar, “The Mining and Metals Industry in Europe” was held on 2 April 2014 in Lisbon, Portugal. The seminar was a joint initiative of the International Lead and Zinc Study Group (ILZSG), the International Copper Study Group.
The Seminar opened with Mr. Colin Fenton, Global Head of Commodities Research and Strategy, J.P. Morgan, who gave the first presentation entitled ‘Outlook for Global Non-ferrous Metals Markets and the Role of Europe in those Markets’. Mr. Fenton provided an analysis of recent changes in the non-ferrous metals industry. He noted that China’s pull on physical markets is getting larger, notably in the metals. He said that economic cycles progress over time, and by definition never ‘end’ - the current investment supercycle is just beyond its midpoint, not at its trough. He expects prices will be strong, but volatile. He estimated refined copper production will likely increase by 4% in 2014. For nickel he forecast that the global balance will be in a slight deficit in 2014, moving into a deeper deficit in 2015.

Mr. Mattia Pellegrini, Head of Unit, Raw Materials/Metals/Minerals, DG Enterprise and Industry, European Commission made a presentation entitled ‘EU Policies and Programs Supporting the Development of the European Mining and Metals Industry.’ Mr. Pellegrini provided information on five EU policy initiatives. First, the EU Raw Materials Initiative, with its focus on critical raw materials, and second, the European Innovation Partnership on Raw Materials with its objectives including the EU Industrial Policy target of increasing the share of industry in GDP to 20%. The third policy initiative was the support for raw materials in Horizon 2020 centred on the European Research Area. The fourth policy initiative falls under the framework of Knowledge & Innovation Communities (KIC). The final EU policy initiative described by Mr. Pellegrini was the Raw Materials Diplomacy Initiative based on dialogues between the EU and partner countries collaborating with mutual benefit.

Mr. Guy Thiran, Director-General, Eurometaux, delivered a presentation on ‘The Mining and Metals Industry in Europe: Opportunities and Challenges’. Mr. Thiran underlined that global trends in population growth, ageing, urbanisation, changing lifestyles with changing mobility patterns, energy mix and communication technologies have major implications for the metals industry. We can expect to see an ever more global economy with growing markets for metals. Inevitably there will be a greater focus on resources. Within Europe the economic crisis, combined with continuous pressure from regulators and from markets and customers, has resulted in a desire for what may appear to be a contradictory goal - green growth. Materials will increasingly have to demonstrate an acceptable sustainability footprint to access markets. There is a need to decouple economic growth from resource use and its environmental impact.

The final presentation, ‘The Lead and Zinc Industry in Europe and the Role of Boliden’, was delivered by Ms. Ing-Marie Andersson-Drügge, Director of Strategy and Technology, Boliden Smelters, Sweden.
Base metals are the fundamental building blocks for construction, infrastructure, energy systems, vehicles and railways. Demand for metals is constantly increasing in the world’s emerging economies. Demand for metals in the EU, the US and other mature economies is more cyclically sensitive and is falling slightly over time, but still is a substantial percentage of global metal usage. The continuous galvanizing industry is the biggest and the fastest growing segment for zinc metal. Environmental legislation is important and regulatory issues have a direct impact on the European metals industry and Boliden. Ms. Andersson-Drügge highlighted the impact of new International Maritime Organization (IMO) rules which come into effect in 2015 regulating sulphur content for marine fuel.

Following the presentations, the Chairman invited all speakers to take part in a panel discussion and opened the discussion by raising the question of community acceptance and asking how the industry is viewed within the EU region. The EU representative confirmed that this is a major issue and expressed the hope that their current study on best practices in member states will help address this. The Scandinavian countries have been successful in gaining community acceptance for mining and metals industries. One particular barrier to be overcome is the location of mineral deposits in natural, protected areas. Linking employment to metals production is important. The representative of Boliden noted that operations in Sweden are often in smaller communities and this helps in gaining community acceptance. Cases where startup companies have failed and have left environmental problems have created problems for the entire industry. The representative of the USGS asked about the potential for re-opening mines in Eastern Europe, noting that there are a lot of old mines in the region and asking whether by-product metals might be recovered. The representative of KGHM replied that in Poland re-opening several old mines is being considered. The Eramet representative confirmed that several waste sites offer potential. The ICSG Director of Economics and Environment raised a question about copper demand, noting that demand in Europe is down and some facilities have shut down. In response the Eurometaux representative said that the European market is a mature market with a relatively high volume of recycling. The adoption of EU chemical legislation has caused a reduction in the ‘risky’ uses of metals, discouraging demand. The Eurometaux representative was of the opinion that the experience in the EU will discourage countries outside the EU from following the EU lead on REACH. The representative of Eurometaux replied that the challenge is to keep the capacity that remains in Europe in place and noted that in a value chain, a change in one link causes the neighboring links to change in the same direction. Thus a weakening of the mining sector weakens the metals processing sector.

In summing up the Chairman underlined the importance of holding events such as the current seminar and encouraged the Study Groups to continue to work on this topic.

For further details of work underway in the Study Groups please email paul_white@ilzsg.org (for lead and zinc), curtis_stewart@ilzsg.org (for nickel) and rebelo@icsg.org (for copper).

Crystals of Nickel(II) sulfate, NiSO4•6H2O

**INSG MEETING 3 - 4 APRIL 2014**

Delegates from INSG member countries, industry and observing countries/organisations met in Lisbon 3-4 April to review statistical, economic and environmental issues related to nickel.

Delegates reviewed the INSG primary nickel market statistics in detail, and discussed the market forecast, which was prepared by the secretariat based on information provided by governments and industry. Details of the forecasts are provided on page 2.

The INSG Environmental and Economics Committee received presentations on topics related to environmental regulation and international policy initiatives that may affect nickel. Mr. Curtis Stewart, Director of Economics and Environment, delivered a presentation on behalf of Mr. Luis Neves on the GeSI Conflict-Free Sourcing Initiative. The Conflict-Free Sourcing Initiative (CFSI) focuses on the chokepoint of conflict minerals as they move from the mine, to the smelter, then through fabrication to the finished product. Concern about conflict minerals is centred on the illegal mining and trading of certain ores in the Democratic Republic of the Congo. A presentation by Mr. Hans Regtuit, Manager Stainless Health & Environment at EUROFER provided an overview of the work of the organization and reviewed technical, regulatory and environmental challenges facing the industry. Mr. Heinz Pariser spoke on ‘The Use of Nickel in Plating.’ INSG has contracted the company Heinz H. Pariser Alloy Metals & Steel Market Research to undertake a study on nickel usage in plating. The presentation provided an overview of the
study which will be published in the near future. Mr. Andrea Gatti, Chief Executive Officer, OSTP, gave a presentation on “Stainless Steel Welded Tubular Business and Critical Applications in Process Industries - A Nickel Intensive Segment”.

The INSG Statistics Committee reviewed the latest statistical data, and also received valuable input to its work through a series of presentations and discussions. Mr. Heinz H. Pariser of Alloy Metals & Steel Market Research, Germany made a presentation on “Nickel Pig Iron – Alternative to Refined Nickel?” Mr. Kai Hasenclever of ISSF, Belgium provided a presentation on the “Latest Developments in the World of Stainless Steel and Its Markets”. Mr. Benno Katz, Managing Director, ELG Haniel Trading, Germany made a presentation on the latest world trends in the supply and demand for stainless steel scrap from the point of view of a large processor entitled “What the Trader’s Role Is in Today’s Nickel Market”. Ms. Sheraz Neffati, Deputy Secretary General, ICDA, France made a presentation: “Overview of the Chromium Industry”.

The INSG Industry Advisory Panel comprised of representatives from the world’s nickel producing, using and recycling industries, once again provided valuable input on the Study Group’s work program priorities. The Panel heard from Mr. Sean Mulshaw, Senior Analyst, Wood McKenzie, United Kingdom who spoke on “Ni-volution: Escalating Costs, the Ban And the Long Term Nickel Price”. Mr. Thomas Hönne-Sparborth, Senior Economic Analyst, Roskill Consulting Group, United Kingdom gave a presentation on “Uncertainty in the Nickel Market: An Outlook For Supply And Demand”. Mr. Karim Awad, Founder of the consulting group α2 commodities, Hong Kong, then gave a presentation on “What Next Following the Indonesian Laterite Export Ban?” The meeting concluded with a panel discussion of the presenters.

**ILZSG SPRING MEETING, LISBON 2014**

The International Lead and Zinc Study Group held its Spring meeting in Lisbon on 2 April 2014. The Head of Statistics and Forecasting presented a review of the current outlook for World supply and demand (See details on page 1). Meetings of the Standing Committee, Economic and Environment Committee and the ILZSG Industry Advisory Panel were held.

The Industry Advisory Panel meeting on 2 April provided an opportunity for an exchange of information between members and industry on the latest developments in the lead and zinc market. A presentation was made on “Prospects for the European Lead Market”, by Mr. Giancarlo Urbani, President, AIRPB, Italy. This was followed by a presentation on “The Likely Impact of the New LME Warehousing Regulations on the Lead and Zinc Markets” by Mr. Nic Brown, Head of Commodities Research, Natixis, London.

The Study Group’s Economic and Environment Committee met on 2 April. Mr. Frank van Assche, Director of European Affairs, International Zinc Association, made a presentation on “Key Regulatory Issues Impacting the Zinc Industry and IZA’s Response”, in which he addressed three topics: Global Harmonised System of Classification (GHS), recent changes in IMO regulations, and the EU classification of lead. This was followed by a presentation by Dr. Alistair Davidson, Technical Manager, International Lead Association (ILA), who spoke on “Challenging Perceptions - Life Cycle Assessments Highlight Sustainability Credentials of Lead”.

**ICSG 43**\(^\text{rd}\) **REGULAR MEETING IN LISBON**

Representatives from ICSG member governments and companies, observer governments and organizations attended the International Copper Study Group’s 43\(^\text{rd}\) Regular Meeting at ICSG Headquarters in Lisbon on 31 March and 1 April 2014. Meetings were held of the Environmental and Economic Committee (EEC), Statistical Committee, Industry Advisory Panel, Finance Committee and Standing Committee, followed by a Plenary Session.

Mr Max Layton, Head of Research, Goldman Sachs Investments, New York, presented an overview of the drivers affecting investment demand for refined copper in China from the perspective of an investment bank. Mr Layton concluded that Chinese commodity financing deals would gradually unwind over the medium term (2014-2016), driven by an increase in FX hedging costs.

Mr Carlos Risopatron, ICSG Director of Economics and Environment, presented recent findings from surveys of industrial use and recent ICSG statistics. Due to lower copper prices and higher end use growth, observed industrial copper use increased worldwide at least 7.6% in 2013, and was 2% higher in the world outside China. IWCC representative and Industry Advisory Panel Chairman, Dr. Mark Lovett,
emphasised the importance of continued work on industrial copper use, copper recycling and on tracking scrap recycling flows.

Mr. Philip Radbourne from the London office of the consulting firm Integer Research presented findings from their study on copper intensive wire and cable use country by country in the ASEAN region in 2007-2013. Mr. Radbourne presented a detailed summary of recent trends in substitution of copper by aluminum and other materials in low voltage cable to construction, transport, telecommunication and other specific end uses. The delegate from Chile highlighted the importance of deepening and sharing studies on trends showing replacement of copper by aluminum in specific end use sectors.

Mrs Laia Perez-Simbor, Project Manager at the European Copper Institute, gave an overview of the European policies affecting the copper industry and copper-containing products, including ECI’s experience in collaborating with the European Union. Mr Andrew Cooper from the International Tin Research Institute (ITRI) in London, UK, made a presentation on ITRI’s Tin Supply Chain Initiative (iTSCi) in the context of the overall conflict minerals issue. This is one of the initiatives that are underway to help companies comply with the U.S. Dodd-Frank Act, and ITRI is regarded as a leader in this area.

The ICSG Director of Economics and Environment presented the outcomes of the 2014 ICSG Annual Recyclables Survey, reporting 2012 copper scrap use and 2013 estimates. World use of copper scrap in direct melt was steady in 2012 at 4.8 Mt-Cu. and was expected to fall 3.6% worldwide in 2013.

The Secretary-General presented the proposed 2014/2015 EEC Work Program. New projects to be added to the 2014/2015 Work Program were discussed, including a study of copper fabrication and recycling in the ASEAN Region, India and Australia. Another activity approved was a joint Study Groups’ International Metals Recycling Seminar to be held in Lisbon on 15 October. It was agreed that ICSG would undertake work on the conflict minerals topic.

At the Statistical Committee meeting the ICSG Director of Market Research and Statistics, gave a presentation of the results of the preliminary forecast of global copper mine production and the balance of refined copper production and consumption. She also gave a presentation on the development of copper mines, smelters and refineries projects until 2017. Mr. Jonathan Barnes, Principal Analyst, Wood Mackenzie, presented current trends in world usage and the short-term outlook for first use of refined copper. Ms. Jane Hammarstrom from the USGS Global Mineral Resource Assessment Team gave an assessment of the world’s undiscovered copper mineral resources. Ms. Rebelo gave a detailed presentation on the Zambian Copper Industry on behalf of Mr. Willie Chilufya, Head of Mineral Economic Unit, Zambian Ministry of Mines, Energy and Water Development, who was unable to be present.

ICSG PUBLISHES NEW LARGE SCALE SURVEY ON INDUSTRIAL COPPER USE IN CHINA IN 2014

In May 2014 ICSG published the results of a large scale survey covering 343 Chinese producers with 6.3 million tonnes of capacity for copper and copper alloy products excluding copper wire rod. This followed the publication in June 2013 of a large scale survey of copper wire rod plants across China: this survey covered up to 91% of Chinese wire rod output in 2012, equivalent to 5.28 Mt and included information on refined copper use, scrap use and output.

Different groups of plants producing fabricated products containing copper across China are included in the survey: flat products as sheet/strip (PSS), rod/bar (RBS), tubes, copper alloy wire, copper foil, copper powder and castings. Among the 343 plants included in this new survey over 4 million tonnes of production capacity was capacity surveyed. The survey provides a detailed overview of past, current and expected capacity, output and use of copper scrap and refined copper up to 2016.

The 2014 survey is now available for sale to ICSG member country/non-member country clients at a price of €400/€600 respectively. The 2013 wire rod survey is also available at a discount price, and remains the most complete copper wire rod survey publicly available on China. To order: mail@icsg.org

ICSG ATTENDS IWCC MEETING

In May 2014 the Secretary-General and the ICSG Director of Market Research and Statistics represented the Study Group at the 61st International Wrought Copper Council (IWCC) Annual Meeting in Munich, Germany, involving both upstream copper producers and downstream users.

ICSG IAP MEETING IN CHILE

In April 2014 ICSG held an Industry Advisory Panel meeting in Santiago, Chile in conjunction with the major annual CESCO copper industry event. The IAP provides an opportunity for Industry Advisors to meet as a group, raise issues to the attention of ICSG government members and provide feedback, guidance and advice to the Group on its priorities, work program and activities. The next ICSG IAP meeting will be held in London on 23 October.

ILZSG PRESENTS AT METAL BULLETIN’S 18TH ZINC AND ITS MARKETS SEMINAR

Mr Paul White, the ILZSG Director of Market and Research and Statistics, made a presentation on “Global Zinc Mine Production at the End of Century”
at Metal Bulletin’s 18th Zinc and its Markets Seminar held in Istanbul, Turkey on 13-14 May. The paper discussed likely medium-term trends in global zinc mine output and the impact of the recent and impending closure of a number of important zinc producing mines including MMG’s Century operation in Queensland, Australia. Copies of the presentation are available from the Secretariat. Please contact paul_white@ilzsg.org.

**ILZSG INTERACTIVE LEAD AND ZINC MINE AND SMELTER DATABASE**

The new ILZSG interactive lead and zinc mine and smelter database was launched in April 2014 and can be accessed via the Statistics section of the ILZSG website (www.ilzsg.org). This interface provides access to the extensive records held in the various ILZSG mine, smelter and new projects databases. Information includes a comprehensive overview of 242 operating zinc mines in 43 countries, 152 operating primary and secondary zinc plants in 35 countries and details of 275 operating primary and secondary lead plants in 66 countries. A mapping facility is available for a most mines and plants. All information will be continuously updated. Contact paul_white@ilzsg.org or joao_jorge@ilzsg.org.

**MINING JOURNAL PUBLISHES INSG ARTICLE**

INSG staff once again collaborated in writing an article for publication in the Mining Journal. The article examines the world nickel market in 2013 and the outlook for 2014. The article was published in the 23 May 2014 edition of Mining Journal. The secretariat has distributed copies to all INSG member country delegations.

**INSG PRESENTS AT 2nd INTERNATIONAL NICKEL CONFERENCE**

Mr. Salvatore Pinizzotto, INSG Director of Market Research and Statistics, presented a paper, ‘Asia’s role- past and present in the global nickel market’ at the Metal Bulletin 2nd International Nickel Conference in Seville (Spain) in March 2014. Copies of the presentation are available from INSG.

**STUDY GROUPS’ PARTICIPATION IN OECD CONFERENCE ON RESPONSIBLE MINERALS SUPPLY CHAINS**

The Director of Economics and Environment for ILZSG and INSG, Curtis Stewart, represented the Study Groups’ at the Seventh ICGLR-OECD-UN GoE forum on Responsible Mineral Supply Chains held in Paris, France, on May 26-28. Information on the outcomes of the conference is available from the secretariat.
MEETINGS, CONFERENCES and SEMINARS

- ILZDA International Conference “Lead and Lead Batteries – Towards Sustainable Development”, New Delhi, India, 28-29 July 2014. Contact: ilzda.info@gmail.com

- The Study Groups will host a meeting of the International Consultative Group on Non-ferrous Metals Statistics in September 2014 in Lisbon. For information contact Joao Jorge at joao_jorge@ilzsg.org

- The 2014 Zinc College will be held in Udaipur, Rajasthan, India ON September 7-11, 2014. Zinc College is an international training program which covers key areas of the zinc business, from exploration to marketing and trading to sustainable development, environment and health. Further information can be found at the International Zinc Association website http://www.zinc.org/about/zinc_college

- The 14th European Lead Battery Conference (ELBC) will be held in Edinburgh, Scotland on 9-12 September 2014. More information can be found at the International Lead Association website http://www.ila-lead.org/conferences.

- In October 2014 China CNIA and Antaike will host the annual Chinese International Copper 2014 in the city of Chengdu, China. ICSG will provide support for the event with a presentation on industrial use, recycling and regulation to be delivered by the ICSG Director of Economics and Environment.

- The third Asia Copper Week including the CESCO Asia Copper Dinner 2014 will be held in Shanghai on 18-20 November. ICSG will be represented by the Secretary-General. http://www.asiacopperweek.com/

Zinc oxide crystal. LED lighting is sweeping the world. It's energy efficient, long lasting, and could save users billions of dollars and dramatically reduce carbon emissions. Light in LEDs is produced by crystals of gallium nitride and zinc oxide Credit: Matthew Foley, University of Technology, (UTS) Sydney.
UPDATE ON JOINT PROJECTS CONDUCTED BY THE STUDY GROUPS

The co-location of the three Study Groups in Lisbon has enhanced the ability to conduct joint projects. Highlighted here are some of the joint projects which have been completed recently.

COBALT AS A BY-PRODUCT OF COPPER AND NICKEL
A joint report of the International Nickel Study Group and the International Copper Study Group which provides improved information on cobalt, and the relationship between nickel, copper and cobalt production, refining and use. The work was carried out by Roskill Consulting Group on behalf of the Study Groups and is intended to be a reference document for governments and companies.

NON FERROUS METALS BY-PRODUCTS: JOINT STUDY GROUPS’ RESEARCH PROJECT
A project by the three Study Groups to generate information on the by-product metals of copper, lead, zinc and nickel was initiated by member countries at the September 2012 meetings. A contractor was selected to gather information on production, usage, trade and other data, on by-product metals. The project resulted in the completion of a 221 page Study of By-Products of Copper, Lead, Zinc and Nickel as well as a Directory of Producers. These publications have been distributed to member countries. A Joint Seminar on by-product metals was held in October 2013. In early 2014 separate publications were issued for each of the metals in the original study: bismuth, indium, germanium, scandium, cobalt, rhenium, tellurium, selenium, rare earths and molybdenum.

JOINT STUDY ON TAXATION AND FISCAL INCENTIVES
This joint project was approved by each of the Study Groups in October 2012 and a contract was awarded to RMG of Sweden to conduct the study. A preliminary report on the project was presented at the April 2013 Joint Seminar in Lisbon. A copy of this presentation is available on the ILZSG website. The final report of the project was published in December 2013.

JOINT STUDY ON RISK FACTORS
The Study Groups jointly collaborated on a project to examine the main risk factors likely to inhibit companies’ ability to meet production targets or to develop planned mining and metals projects. A presentation on the study was made at the October 2013 meetings and the full report was published in January 2014.

Study Groups Publications Resulting from Joint Projects
- Study Groups’ Survey of Semifabricators in China
- By-Products of Copper, Zinc, Lead and Nickel
- Joint Study On Risk Factors
- Joint Study On Taxation And Fiscal Incentives
- Cobalt As A By-Product Of Copper And Nickel
- Individual Reports on By-Product metals for bismuth, indium, germanium, scandium, cobalt, rhenium, tellurium, selenium, rare earths and molybdenum.

(More details on publications can be found in pages 10-14)
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ILZSG Member States:
Australia, Belgium, Brazil, Bulgaria, Canada, China, European Union, Finland, France, Germany, India, Iran, Ireland, Italy, Japan, Korea, Mexico, Morocco, Namibia, Netherlands, Norway, Peru, Poland, Portugal, Russian Federation, South Africa, Serbia, Sweden, Thailand, United States

INSG Member States:
Australia, Brazil, Cuba, European Union, Finland, France, Germany, Greece, Italy, Japan, Norway, Portugal, Russian Federation, Sweden, United Kingdom

ICSG Member States
Australia, Belgium, Luxembourg, Chile, China, European Union, Finland, France, Germany, Greece, India, Iran, Italy, Japan, Mexico, Peru, Poland, Portugal, Russian Federation, Serbia, Spain, Sweden, United States, Zambia

PUBLICATIONS

*******AVAILABLE NOW********

NEW
2014 China Brass Mills Survey: Copper Users ex-Wire Rod.
The ICSG March 2014 survey covers 343 Chinese producers with 6,345 ktpy capacity for copper and copper alloy products (excluding copper wire rod). The report provides details of past, current and expected capacity, output and use of copper scrap and refined copper. The study allows readers to understand the transformation of the industrial sectors using copper in China, the closure and replacement of old plants and the evolution of new plant capacities. The relative importance of scrap versus refined copper in every industry group is explained in detail. Scrap availability, scrap spreads, prices and other factors impacting the industry are discussed. Forecasts for the period 2014-2016 are included for each product included in the survey. Published May 2014.

NEW
Lead and Zinc Mine and Smelter Database
A new interactive interface on the ILZSG website providing access to the comprehensive records contained in the extensive ILZSG mine and smelter databases. Information on operating mines and smelters includes contact details, capacities and location. Listings of both currently committed and under consideration lead and mine and smelter projects are provided as are details of all mine and smelter openings and closures back to 2000. Information can be filtered by country and date and downloaded in various formats including Excel. Continuously updated.

NEW
Lead and Zinc New Mine and Smelter Projects 2014
This 69 page report covers lead and zinc mines and smelters opened or closed during 2014, firm projects currently committed and other projects under consideration. Developments in 46 countries are covered with a total of over 200 separate entries. In addition, where available, estimates of ore reserves and the percentages of the metals they contain are also given. Published January 2014

NEW
Taxation, Royalties and Other Fiscal Measures Applied to the Non-Ferrous Metals Industry
A joint report of the ILZSG, INSG and ICSG providing an in-depth analysis of taxation and fiscal incentives applied to non-ferrous metals in the major mining and metals producing countries. The research was carried out by Raw Materials Group (RMG) of Sweden on behalf of the Study Groups and is intended to be a valuable reference document for governments and companies. 50 pages. Published January 2014.

NEW
China’s Nickel Mine and Refined Nickel Production 2014
This report, prepared for INSG by Beijing General Research Institute of Mining & Metallurgy (BGRIMM) provides the latest information on Chinese nickel mine production, reserves and resources as well as data on primary nickel production. Figures for refined nickel, nickel salts and nickel pig iron are provided. Trade data including imports of laterite and import and export of refined nickel are detailed. Published March 2014.
 Newly Added Publications

New Individual Reports - By-Products of Copper, Zinc, Lead and Nickel
Separate reports on the production, usage, trade and outlook for 11 by-products metals (bismuth, germanium, indium, cobalt, platinum group metals, scandium, molybdenum, rhenium, selenium, tellurium and rare earth metals). Each report contains information on sources of the metal, refinery processes, recycling, markets, historic process and pricing mechanisms, uses, government regulations, REACH status of compounds, government stockpiles and trade restrictions. A directory of mining and producing companies with capacities is included. Published January 2014.

New Directory of Copper Mines and Plants
The Directory highlights current capacity and provides a five year forecast of capacity for over 1,000 existing and planned copper mines, smelters and refineries on a country by country basis, with separate tables for SX-EW plants. Details for each operation are included and the Directory separates operations between Operating & Developing and Exploration & Feasibility stages. Published January 2014.

New Cobalt as a By-Product of Copper and Nickel
This joint INSG/ICSG report provides information on cobalt, and the relationship between nickel, copper and cobalt production, refining and use. The report, done by Roskill, has data on production and usage through 2012 as well as an outlook for cobalt mine capacity and production for the 2012 to 2018. Data on end-of-life recycling rates for cobalt-bearing products is also included. Published March 2014.

New Report on Risk Factors
An authoritative study examining a wide range of issues and risks currently affecting the development of mineral and metals projects. The approach is global with a particular focus on copper, lead, zinc and nickel. The report covers all aspects of the metals producing sector including mining, smelting and refining and was undertaken by Oakdene Hollins of the UK on behalf of the ILZSG, ICSG and INSG. 84 pages. Published January 2014.

New World Directory: Lead and Zinc Mines
This comprehensive 72 page report covers mines located in 43 countries and includes information on ownership, type of mine and start-up date, with full contact details. Data regarding annual production capacities for lead and zinc is provided. Extensive coverage of mines located in China. Published January 2014.

New World Directory: Primary and Secondary Zinc Plants
This report provides a fully updated, detailed listing of primary and secondary zinc smelters and refineries throughout the world including extensive coverage of China. The directory contains a total of 152 plants comprising 121 primary refineries and 31 secondary operations spread over 35 countries. Information listed includes addresses, telephone and fax nos., e-mail and web addresses, processes used and current capacities. 56 pages. Published January 2014.
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**INSG World Directory of Nickel Production Facilities 2013**
Comprehensive directory lists nickel mines, smelters and refineries as well as new nickel industry developments (committed, likely and potential) together with recent closures in more than twenty countries. Published December 2013.

**Report on Chinese Lead and Zinc Mining Sector**
This report was prepared for ILZSG by Beijing Antaike Information Development Co. It provides a detailed overview of Chinese lead and zinc resources and the government institutions responsible for developing them. It also discusses rules and regulations governing foreign investment in the Chinese lead and zinc mining sector and includes an in-depth analysis of Chinese lead and zinc mine output. 45 pages. Published November 2013.

**Copper and Copper Alloys Scrap Supply Survey in the European Union (EU-27) 2013**
The survey covers most of the copper scrap and copper alloys scrap supply chain in Europe, small and large traders, direct collectors and recyclers of scrap in the EU-27. The consultants contacted 227 companies with a 25% response rate and 58 industry players comprising interviews with copper scrap and alloy scrap traders, recyclers, direct collectors and industry experts. The study summarizes the findings from both secondary and primary statistics. One section provides a look into a top down approach to estimate material availability, copper content in trade and the economic logic of copper scrap dismantling. Published May 2013.

**The World Copper Factbook 2013**
A comprehensive overview of copper, with statistics, graphs, flowcharts and other information providing details on production, usage, recycling, definitions and history. Published September 2013.

**Nickel Ore Market of Southeast Asia 2013**
This report provides essential information on the rapidly changing laterite ore market and the nickel pig iron industry. The report lists existing and planned mines and smelters in Indonesia, the Philippines, Myanmar, Papua New Guinea and the Solomon Islands, giving information on capacity, ore grades, export destinations, smelter process and more. 56 pages. Published August 2013.

**Directory of Copper & Copper Alloy Fabricators (First Use) 2013**
This directory provides a systematic global overview of companies and plants involved in the first use of copper. First users are mainly semis fabricators that process refinery shapes into semi-finished copper and copper alloy products. The Directory covers wire rod plants, ingot makers (for castings), master alloy plants, brass mills, and electrodeposited copper foil mills. The 2013 edition includes a complete update of Chinese, Russian, India and Brazilian copper wire rod plants and projects. Published July 2013.

**Study on Chinese Zinc First Use Market 2012**
This study comprises a detailed examination of the recent evolution of the zinc first use market in China and discussion of likely future trends. The work was undertaken on behalf of ILZSG by the highly-regarded Beijing General Research Institute of Mining and Metallurgy (BGRIMM) and includes in depth analysis of all the major first use sectors. The majority of information contained in the report is based on extensive direct contact with industry experts, zinc users in the different sectors and the relevant Chinese associations. 87 pages. Published June 2012.
Investigation of the Indian Lead Market

This report was prepared for ILZSG by the Indian Lead Zinc Development Association (ILZDA), an organisation that has been closely involved with the Indian lead and zinc sectors for the past 50 years. It provides an up-to-date analysis of trends and developments in the rapidly expanding Indian lead market. A high proportion of the information provided in the report was obtained via direct contact with lead producers and recyclers, consumers, traders and relevant authorities. 92 pages. Published February 2012.

Copper Scrap Supply Survey in China

This report describes the findings of a survey of key copper recyclers in China and includes copper scrap stocks and flows. The survey covers three groups of scrap importers and two groups of scrap dismantlers. Scrap importers include scrap traders, industries importing for internal use and scrap yard owners importing scrap. The sample of scrap dismantlers includes companies specialized in dismantling domestic scrap and companies dismantling imported scrap. More than one million tonnes of copper and copper alloy scrap traded in 2011 are included in the survey sample. Published May 2012.

INSG China Nickel Pig Iron Market Study

This study, carried out by Shanghai Metals Market for INSG, provides an overview of the rapidly changing nickel pig iron market in China. NPI has become the major nickel source in China and accounts for a growing share of global production. The report looks at evolving trends in production and ore supply as well as furnishing information on major NPI producers and stainless steel producers. Published May 2012.

Copper Scrap Recovery in NAFTA

This report analyses the organisation of the copper recycling industry in the United States, Canada and Mexico. A database with over 500 plants recycling scrap is included and used to describe industrial organization, technologies used to recover old scrap, and yard management practices and inventories. The report on recyclers in the NAFTA region includes findings from interviews on factors driving the inventory decisions and outlines concerns of recyclers including theft, trade and environmental restrictions. Published May 2012.

Joint Study Groups’ Survey of Semifabricators in China

This report was undertaken jointly by the three Study Groups and is based on a survey which measured scrap and refined use of copper, zinc, nickel, lead and tin by Chinese fabricators of copper and copper alloys, including brass. It validates and improves the ICSG Recyclables Survey for China and in cooperation with ILZSG and INSG provides data on nickel and zinc recycling and use in China. While focusing on refined and scrap copper use, the report provides useful information on quantities and trends in zinc and nickel usage for alloys in China. Published April 2012.

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ICSG Directory of Copper Mines and Plants
The Directory of Copper Mines and Plants highlights current capacity and provides a five year outlook of forecast capacity for over 1,000 existing and planned copper mines, plants and refineries on a country by country basis, including separate tables for SX-EW plants. Salient details for each operation are included and the Directory separates operations between Operating & Developing and Exploration & Feasibility stages. To be published in December 2014.

Report on World Zinc Oxide and Zinc Dust Production and Usage
The report will analyze the zinc oxide and zinc powder and dust sector. It is intended to list the location of major zinc oxide producing plants and zinc dust and powder producing facilities together with estimates of capacities. To be published 2014

Environment and Health Controls on Lead: 2014
A review of current and proposed regulations controlling lead in works, lead in the atmosphere and lead in water in various jurisdictions. Available in PDF or spreadsheet form. To be published 2014.

Environmental and Health Controls on Zinc: 2014
A review of current and proposed regulations controlling zinc in works, zinc in the atmosphere, zinc in water and recommended daily dietary allowance for humans and animals. Available in PDF or spreadsheet form. To be published 2014.

Nickel – A Surface Technology Material - 2014
This publication is the first approach by INSG to provide a comprehensive overview of the use of nickel metal in the plating and surface treatment industry, a sector that accounts for about 10 percent of nickel usage. The report was carried out by Heinz Pariser on behalf of INSG. Data is provided on the surface technology industry in various regions and on the major uses of plating such as the automotive sector, electro and electronics. The report details the supply chain for nickel used in plating and other surface treatments and provides contact information for the most important companies in the various stages of nickel plating. To be published July 2014.