Metals Despatch

Newsletter of the International Copper, Lead, Zinc and Nickel Study Groups

December 2015, Issue No. 20

LEAD AND ZINC FORECASTS

The outlook for World supply and demand for lead and zinc was presented during the International Lead and Zinc Study Group 60th Session in Lisbon, Portugal from 8-9 October 2015. Highlights include:

- **The global usage of refined lead** is forecast to fall by 0.7% to 10.82 million tonnes in 2015. In 2016, an increase of 2.6% to 11.11 million tonnes is anticipated.
- In China a slowdown in the production and sales of e-bikes accounting for about a third of Chinese refined lead metal usage continues to adversely affect demand and a further reduction of 0.6% is forecast this year. However, in 2016 increased usage in the automotive and industrial battery sectors is predicted to result in a rise of 2.6%.
- After declining in 2014, global **lead mine supply** is forecast to fall by a further 2.5% to 4.80 million tonnes in 2015 and then increase by 5.5% to 4.86 million tonnes in 2016. The decrease this year is due largely to a 13% fall in Australian output.
- World **production of refined lead metal** is expected to decrease 1.0% to 10.83 million tonnes in 2015 and then increase by 3.5% to 11.20 million tonnes in 2016.
- The **forecast** by ILZSG is for global demand for refined lead metal to be in close balance between supply and demand in 2015. However, in 2016 increases in ex-China refined metal supply are expected to result in a surplus of 97,000 tonnes.
- Global **demand for refined zinc** metal will rise by 1.1% to 13.90 million tonnes in 2015 and a further 3.3% to 14.37 million tonnes in 2016. Growth will be primarily driven by increased Chinese usage for galvanized sheet output.
- World **zinc mine production** is forecast to increase by a marginal 0.3% to 13.55 million tonnes in 2015 and 1.8% to 13.80 million tonnes in 2016. This is primarily due to higher output in China with production in the world ex-China expected to fall by 1.8% this year.
- Global **refined zinc metal production** is expected to rise by 3.2% to 13.99 million tonnes in 2015 due to increases in Canada, China, India and Korea. A further increase by 1.6% to 14.21 million tonnes in 2016 is expected.
- The latest **forecasts** supplied by the Group's member countries indicate that global supply for refined zinc metal will exceed demand by 80,000 tonnes in 2015. For 2016 mine supply is expected to restrict growth in metal output and a global market deficit of 152,000 tonnes is forecast.

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

NEXT STUDY GROUPS' MEETINGS

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

ICSG: 9-10 March 2016, Lisbon, Portugal in conjunction with Metal Bulletin International Copper Conference on 7-9 March

INSG: 25-26 April 2016, Lisbon, Portugal

ILZSG: 1.30pm 27 April 2016, Lisbon

Joint Seminar: 9.00am 27 April 2016: "Innovative Technology in Mining and Metals" Lisbon

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COPPER FORECAST

During the 46th Regular Meeting of the International Copper Study Group Statistical Committee in Lisbon on 6 October 2015, ICSG member countries reviewed the current outlook for trends in World supply and demand for copper during 2015 and 2016 and issued the following forecast:

- Following growth of around 7% in 2014, ICSG expects **world apparent refined usage** in 2015 to decline by 1.2%. This is mainly because apparent demand in China is expected to remain essentially flat, although underlying "real" demand growth in China is estimated by others at around 3-4% (lower than the 4.5-5% anticipated growth in April). On the other hand, usage in the rest of the world is expected to decline by 1.5%. For 2016, the growth in world apparent refined usage is expected at around 3% with underlying Chinese industrial demand growth expected at around 4%. Usage in the rest of the world is expected to increase by about 2%.

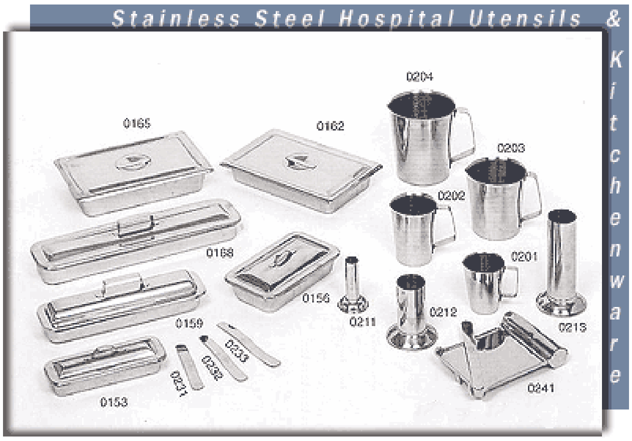
- After increasing by almost 7% in 2014, **world refined copper production** in 2015 is expected to increase by only 1% year-on-year to 22.7 Mt (million tonnes). Growth of around 7% in China will be partially offset by a decline in production in Chile, Japan and the United States, the second, third and fourth leading refined copper producers. Primary refined production (excluding SX-EW) and secondary production are expected to grow by around 2% each, while SX-EW output is anticipated to decline by 4%. In 2016, world refined copper production is expected to grow by around 2.5% to 23.2 Mt, as larger growth of 4% in primary electrolytic production will be partially offset by a further 4% decline in SX-EW production.

- **World mine production** after adjusting for historical disruption factors is expected to increase by around 1.2% in 2015 (a similar growth to 2014) to reach 18.8 Mt. Despite announced production cuts, higher growth of around 4% is expected in 2016 as additional supply is expected to arise from expansions at existing operations, ramp-up in production from mines that have recently come on stream and output from a few new mine projects. Growth in 2015 and 2016 is expected to be in the form of copper in concentrate as SX-EW production is envisaged to decline mainly due to the announced production cuts being almost entirely at SX-EW mines.

- ICSG projections for 2015 indicate that the market should essentially remain balanced, while in 2016 ICSG forecasts a small deficit of around 130,000 metric tonnes (t) as demand growth outpaces production growth. This compares with a surplus of 360,000 t and 230,000 t for 2015 and 2016, respectively, forecast at our April 2015 meeting. The revisions reflect substantial changes in market conditions since April 2015. Although a downward revision has been made to global usage in view of lower than anticipated growth in China, larger downward adjustments have been made to production as a result of recent announcements of production cuts.

- In developing its projections, ICSG recognizes that global market balances can vary from those projected owing to numerous factors that could alter projections for both production and usage. In this context it can be noted that actual market balance outcomes have on recent occasions deviated significantly from ICSG market balance forecasts due to unforeseen developments

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



Nickel containing stainless steel is widely used in healthcare and medicine.

NICKEL FORECAST

The International Nickel Study Group (INSG) met on 5- 6 October 2015 in Lisbon and reviewed the current outlook and trends in World nickel supply and demand. The following forecast was issued:

- Global **primary nickel production** was 1.994 Mt in 2014, decreased slightly to 1.954 Mt in 2015 and is forecast to reach 1.942 Mt in 2016.

- World **primary refined nickel usage** was 1.863 Mt in 2014 and increased to 1.905 Mt in 2015 and INSG estimates it will reach 1.965 Mt in 2016.

- A significant **stock** build has been recorded beginning in 2013 and continuing into 2015. Reasons for the increase include the number of new nickel projects that have started up, existing projects that have ramped up production, and slowing growth in usage in some regions.

- INSG recognizes the significant impact of the current financial and economic 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 any questions on the market outlook please email INSG Director of Market Research and Statistics Salvatore Pinizzotto at s.pinizzotto@insg.org

Zinc is used in many medical applications

JOINT STUDY GROUPS' SEMINAR

A Joint Study Groups' Seminar "The Mining and Metals Industry in Latin America" was held on 7 October 2015 in Lisbon with the involvement of the three Study Groups and brought together experts from around the world. Mr. Sergio Hernandez of the Chilean Copper Commission (Cochilco) served as chairman for the event. The keynote presentation was by Mr. Paulo de Sa, Practice Manager at the World Bank who spoke on "Non-ferrous Metals in Latin America: An Overview of Challenges and Opportunities". Following the keynote speech, presentations were made which provided more detail on the copper, nickel/stainless steel and lead/zinc sectors respectively. The first presentation, on copper, was by Mr. Manuel Medina Pegram, of Met-Mex Penoles S.A. of Mexico, who delivered a presentation on the "Looking to the Future – Lead Zinc and Copper in Mexico". Mr. Paolo Cabrejos Marin, Gerente Comercial, Colcan Compania Minera, Peru, then made a presentation on "An Assessment of the Prospects for the Peruvian Lead and Zinc Sector".

Mr. Carlos Risopatron, ICSG Director of Economics and Environment, provided an overview of the region in his presentation "An Overview of the Copper Industry in Latin America including Committed and Possible Projects". The large gap between copper concentrate exports and the low regional domestic smelter and refined copper production expected for the future was discussed in detail. The stagnation in regional industrial use of refined copper in Latin America was examined. The final presentation looking at the copper sector was provided by the International Copper Association and entitled "ICA Latin America: Promoting Copper Demand". To look at the nickel sector, Mr. Salvatore Pinizzotto, INSG Director of Market Research and Statistics, opened with a presentation entitled, "An Overview of the Nickel Industry in Latin America including Committed and Possible Projects". This was followed by Mr. Kai Hasenclever, Director, Economic and Statistics at the International Stainless Steel Forum (ISSF), who spoke on "Initiatives to Promote Stainless Steel Demand in Latin America". The focus then shifted to lead and zinc and Mr. Paul White, ILZSG Director of Market Research and Statistics spoke on "An Overview of the Lead and Zinc Industry in Latin America including Committed and Possible Projects. This was followed by Mr. Stephen Wilkinson, Executive Director of the International Zinc Association (IZA), who made a presentation on "IZA Market Development in Latin America". The section on investment trends in the region was opened by Dr. Chris Hinde, Director of Reports at SNL Metals & Mining, who spoke on "Trends in Investment, Consolidation and Rationalization in the Latin American Mining and Metals Industry".

The next presentation in the section "Government Perspectives on the Importance of Latin America" was made by Mr. Mattia Pellegrini, Head of Unit, Resource Efficiency & Raw Materials, DG Internal Market, Industry, Entrepreneurship & SME's, European Commission. He spoke on "The Bilateral Relationship between the European Union and Latin America in Non-Ferrous Metals, including the Raw Materials Dialogue". Mr. Naoki Kasuya, General Manager of JOGMEC at the London Office, gave a presentation on "The Bilateral Relationship between Japan and Latin America in Non-Ferrous Metals".

The Seminar concluded with a panel discussion with participation by the various speakers. The panel discussion allowed the audience to raise points for clarification and allowed the presenters to elaborate on their presentations. Questions raised in the panel discussion included the long term cycle in mining and potential impact of the new Trans-Pacific Trade Agreement. The seminar underlined that the three Study Groups have an important ongoing role in providing data to assist in better understanding the production, use and trade of metals.

For further details about the Seminar, please email
paul_white@ilzsg.org (for lead and zinc),
curtis_stewart@ilzsg.org (nickel)
risopatron@icsg.org (copper).

The presentations given at the Seminar may be viewed by visiting each Study Group's website.

INSG MEETING OCTOBER 2015

Delegates from INSG member countries, industry and observing countries/organisations met in Lisbon on 5-6 October 2015 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 Economic Committee received presentations on a range of topics that related to nickel. Discussions in the Committee covered a wide range of topics including economic trends and changes in regulations on environment, health and safety relating to nickel. During the meeting the following presentations were made and discussed:
Mr. Nigel Ward, Director for Promotion and Market Development at the Nickel Institute, made a presentation on "Nickel Institute's Market Development Strategy and Activities"; Professor Dr. Jani Bakallvashi, a consultant, made a presentation on "Nickel Industry Developments in the Balkan Region"; Mr. Racket Hu, Research and Consulting Director at SMM of China, made a presentation on "China NPI Market, Production and Cost". Finally, Mr. Curtis Stewart, INSG Director of Economics and Environment, provided delegates with a status report on the Environmental and Economics Committee Work Program.

The Statistics Committee reviewed and discussed the latest statistical data. The Committee also received valuable input to its work through presentations and discussions. Mr. Kai Hasenclever, Director, Economics, Statistics and Long Products, ISSF, Belgium, made a presentation "The Current Situation on the Global Stainless Steel Market". Mr. Christian Jessen, Head of International Key Accounts, Cronimet Group, made a presentation on "The Stainless Steel Scrap Market – A Commercial Overview". Mr. Gert Oehm, Director Strategic Group Purchasing, Schmolz+Bickenbach Edelstahl Gmbh, made a presentation on the latest developments in the company. Mr. Xu Xin, Senior Manager Nonferrous Metals Markets, Shanghai Futures Exchange, China, made a presentation on "Development and Innovation of China's non-Ferrous Metals Futures Market".

The INSG Industry Advisory Panel, comprised of representatives from the world's nickel producing, using and recycling industries, provided valuable input on the Study Group's work program priorities.
During the meeting of the Panel several presentations were made and discussed: Mr. Jim Lennon, Managing Director, Red Door Research Ltd. United Kingdom made a presentation on the subject "Stainless Steel Raw Materials and their Impact on the Value Chain". Mr. Martin Antonio Zamora, Senior Vice President for Marketing and Strategic Planning and Mr. Koichi Ishihara, Vice President for Marketing & Procurement, Nickel Asia Corporation, Philippines, made a presentation on "Historical Nickel Ore Supply from the Philippines to China and Forecast for 2015". Mr. Antti Saarela, Senior Market Analyst Raw Material Procurement, Outokumpu, Finland, made a presentation on "Outlook for Stainless Steel and Its Raw Materials Markets". Mr. Emre Ege, Investment Manager, Meta Nikel Kobalt A.S., Turkey, made a presentation on "The Gordes Nickel Cobalt HPAL Project in Turkey". Copies of the presentations are available on the INSG website www.insg.org

Stainless Steel is used to make a wide range of medical instruments and tools

ILZSG 60TH SESSION, LISBON 2015

The International Lead and Zinc Study Group held its 60th Session on 8-9 October 2015 in the conference facilities of the Altis Grand Hotel in Lisbon. Delegates were presented with a review of the current levels of world supply and demand and the outlook for 2016 at the meeting of the ILZSG Statistical and Forecasting Committee (See details on page 1). Meetings of the Standing Committee, Economic and Environment Committee, Mines and Smelter Project Committee and the ILZSG Industry Advisory Panel were held.

The Industry Advisory Panel met on 8 October and provided an opportunity for members to comment on the latest developments in the lead and zinc market. Three presentations were made during the meeting. The Panel received a very interesting and instructive presentation from Mr. Marc De Jonghe, Director, Raw Materials Supply and Business Development at Umicore Zinc Chemicals on "Umicore's Approach to Zinc Recycling". Mr. Racket Hu, Research and Consulting Director, Shanghai Metal Markets (SMM), then presented a highly informative paper which discussed "The Prospects for Chinese Lead Demand". Finally, Mr. Jay Nambiar of Hevea Tech, Malaysia made an interesting presentation on the topic of "Zinc Use in the Rubber Industry", an important end use market for zinc. Copies of these presentations are available on the ILZSG website.

The Mine and Smelter Projects Committee was convened on 8 October. Information was provided on the openings and closures of lead and zinc mines and refineries in 2015 and the outlook for the short to medium term. Delegates received an informative presentation from Mrs. Didem Ustuner Saka, Mining Engineer, Strategic Development Department, Eti Maden, Turkey on “The Current Situation and Outlook for the Turkish Lead and Zinc Industry”. Turkey is the Study Group’s newest member. This was followed by a very interesting presentation by Mr. Graham Deller, Head of Lead and Zinc Research, CRU, UK on “A Zinc Smelter Bottleneck?”

The Study Group’s Economic and Environment Committee met on 9 October. Mr. Curtis Stewart, Director of Economics and Environment, presented the work program, reporting on activities undertaken in 2015 and those proposed for 2016. A number of presentations were then received, the first being from Mr. Stephen Wilkinson, Executive Director of the International Zinc Association, who spoke on “Galvanized Steel in Automotive: New Developments”. Dr. Geoffrey May, Principal, Focus Consulting made a presentation on “The Industrial Lead Battery Market”. The presentation provided an overview of a report done by Dr. May on a contract from ILZSG. Mr. Robert Gray, Chief Commodities Strategist at Resource Capital Funds, Australia, then gave a presentation on “Private Equity Investment in the Metals & Mining Sector”. This was followed by Dr. Andy Bush, Managing Director of the International Lead Association, who gave a presentation on “An Overview of Recent Regulatory Developments”. Dr Bush noted that the automotive sector accounted for 58 percent of the global market for lead acid batteries in 2015, while the e-bike market accounted for another 18 percent. Dr. David Humphreys, Principal at Daiecon Consulting, then spoke on “The Evolving Economics of Mining”. Finally, Mr. Iqbal Johal, Marketing Manager at UK Galvanizers Association, provided a very informative presentation on “Galvanizing in Architecture”. The use of galvanized steel in architecture is promoted by the UK Galvanizer’s Association. Copies of the presentations are available on the ILZSG website.

The antimicrobial characteristics of Copper are used in numerous applications to protect health

ICSG MEETING OCTOBER 2015

Representatives from ICSG member governments, industry associations, companies and observer governments attended the International Copper Study Group´s Regular Meetings at ICSG Headquarters in Lisbon on 5-6 October 2015.

Mr Carlos Risopatron, ICSG Director of Economics and Environment, introduced recent trends in global copper mine supply, demand for refined copper and copper availability in China in 2014 and 2015. He then presented data on the increasing dependency of the Chinese copper industry on imported copper ores and copper concentrates in 2015, with falling imports of refined, blister and scrap copper in 2015. Copper use in Chinese fabrication is still growing in 2015, with increasing use of refined copper and a shortage of high grade imported scrap. Meanwhile outside China, the industrial use of copper in fabrication in developed economies is falling 2.5% annually in output data reported to September 2015.

Ms Christine Meilton, Copper Analyst, CRU, London, UK, delivered a presentation focused on the copper industry overcapacity across the value chain, from mining to smelters, refineries and fabricators. The analyst said that oversupply in mine and refined production was balanced by recent production cuts. CRU expects that the copper mine supply gap will open up and copper mining projects that are currently uncommitted will be needed. In relation to the copper demand side the analyst reported that wire rod production and capacity utilization has plummeted across the developed world outside China. The tube industry is still very competitive and capacity utilization in the copper tube and flat rolled sectors is much higher than in the rest of the world. Investments in smelting and refining and semis production capacity in China mean that the global market is suffering from overcapacity in these sectors. Ms Meilton concluded her analysis highlighting that the cutbacks have reduced the surplus and will bring forward the return to a deficit market as copper mine production growth will slow because projects have been delayed and exploration expenditures slashed.

Mr Colton Bangs, UMICORE Market Intelligence & Business Research Unit, Hoboken, Belgium, presented a detailed insight into the electronics recycling chain focused on recovery from electronic scrap. Mr Bangs noted that the highest priority in Western Europe for precious metals recycling was IT appliances. Weight decrease and miniaturization are trends already felt in the recycling industry and are impacting volumes, creating the risk of treatment capacity mismatch, and generating a need to rethink metal recycling approaches. The UMICORE representative concluded by outlining the main challenges for the future for e-scrap recycling that require urgent solutions, including a focus on improved collection of small electric and electronic scrap, disseminating quality and performance standards, strengthening complementarity and promoting sustainability through collection, dismantling and other steps in the metal recycling business.

Dr Gerardo Alvear, Business Development Manager, Glencore Technology, Australia, delivered a presentation on challenges facing the copper smelting and refining industries. Dr Alvear noted China is the world's largest smelting country producing only 11% of total world mine production but smelting 31% of the world copper concentrates. Meanwhile in Chile modernization still needs to occur with tighter S02 and arsenic emission controls introduced and with several projects under study to increase S02 fixation and better capture of fugitive gas. Dr Alvear observed that the global copper smelter industry is now operating in a new more complex setting where commercial and environmental regulations are affecting the long term sustainability of the business. Greenfield smelters are expected to be located in key places in Africa and central Asia and we might see a return to smelters close to the mine site in some cases in order to avoid the transport of complex concentrates. The future trend is to see synergies between mine/concentrator/smelters with synergies between base metals, and with important dust processing plants associated. He suggested that in the future we can expect that the complexity of copper concentrates will exert additional pressure on current smelting technologies that were developed for different concentrate and scrap feed scenarios. We might see increasing environmental requirements that will trigger the need to continue modernizing copper smelters through replacing the converting technology with continuous units. Increasing automation and process intensity is also expected in copper smelters and refineries.

ICSG Director of Economics and Environment presented an annual update of the global regulatory survey across main regions and countries producing, trading and using copper worldwide. He identified trends in the observed regulatory changes in 2014-2015 – for example increasing restrictions on exports of low value added copper raw materials in South East Asia as in the case of the ore and concentrates export ban in Indonesia. At the same time increased international pressure on trade of concentrate harmful to the environment was observed. A trend to support high value added exports of semi-fabricated copper and copper alloy products was observed in the regulatory changes in China, i.e. more efficient taxation of the industry. Regulatory pressure to report payments to governments is being encouraged across OECD countries. In the United States of America efforts to reduce red tape impacting new copper mining projects are continuing. Efforts to retain domestic scrap are seen in the European Union regulatory rules related to domestic use and recycling of copper.

At the Statistical Meeting, Ms Ana Rebelo, ICSG Director of Market Research and Statistics, presented the results of the preliminary forecast of global copper mine production and the balance of refined copper production and usage and explained the main assumptions behind it.

Dr. Mark Loveitt, President of the International Wrought Copper Council (IWCC), gave a detailed presentation on the current situation and outlook for copper refined usage in the EU.

Regarding the topic of ICSG accuracy of forecast, Ms. Rebelo gave a presentation of comparisons between ICSG forecasts for 2014 and actual data for 2014. She covered mine and refined production, refined usage, and the refined market balance.

The ICSG Industry Advisory Panel met on 15 October 2015 in London with the objective of encouraging further industry participation and informing a wider range of copper industry representatives of the work and benefits of the Study Group. Industry advisers from Belgium, China, Italy, Japan, Sweden and the United States were present along with industry association and Study Group representatives. Topics discussed included the latest copper forecast, the ICSG work program, the latest studies on scrap, ICSG Directories and the 2015 Survey of Regulatory Developments Affecting Copper. Mr. Li Yusheng, China Non-Ferrous Metals Industry Association (CNIA), gave a presentation on the Chinese usage trend for 2015/2016.

ICSG 2015 DIRECTORY OF COPPER AND COPPER ALLOY SEMIFABRICATORS

ICSG launched the 2015 Edition of the Directory of Copper and Copper Alloy Fabricators – First Use in September 2015. In China most of the 2010-2015 project pipeline has been completed and fabrication capacity is now over 20 Mt. With the completion of new plants an excess capacity continued to build in 2014 even though not all new capacity is operational. In Western Europe fabrication capacity fell to 7.9 Mt in 2015. This is 444 kt less than the capacity reported in 2014 because of plant closures net of some plant expansions in Spain and Italy. The fabrication capacity reported in North America achieved 5.4 Mt in 2015 with more capacity reported in Mexico and the US, but with a low US capacity utilization and falling fabrication output in the first half of 2015. In South East Asia the reported capacity increased to 3.8 Mt with new plants and improving reporting in Thailand, Indonesia and Malaysia. The regional leader India has 1.5 Mt of fabrication capacity in 335 small plants reporting fabrication capacity below 20 kt each and less than 20 plants in India reporting plant capacities over 20 kt in 2015. In Eastern Europe the fabrication capacity reported increased to 3.3 Mt on new wire rod furnaces and better reporting in

Azerbaijan, Slovakia, Ukraine wire rod plants. The Middle East and North Africa increased the reported fabrication capacity to more than 2.5 Mt in 2015, mainly due to copper wire rod capacity updates in Iran, United Arab Emirates and Kuwait. In Latin America a significant increase in capacity was reported in Brazil, and improved reporting was observed for wire rod plants in Cuba and Colombia. The Directory is available for sale at mail@icsg.org

ICSG 2015 STUDY ON INDUSTRIAL USE OF COPPER IN THE ASEAN, INDIA AND OCEANIA

This regional study completed in 2015 covered over 3.75 million tonnes of copper and copper alloy semi-fabrication capacity in the region and a regional output reported of more than 2.65 kt for 2013. The plants included in the study covered the known capacity to process refined copper and scrap, added new capacities, added unreported capacities and included the most important regional users of refined and scrap copper. Reported fabrication output includes not only copper products such as copper wire rod and copper fabricated products including tube, sheet and rod, but also brass mill products including copper alloy tube, copper alloy sheet and copper alloy rod. Fabrication plants located in India, Thailand, Indonesia and Malaysia constitute close to 87% of total installed capacity and 85% of the output reported in the study. The comprehensive 123 pages regional report includes a plant by plant database, a country by country discussion of recent industrial copper use trends, and a country by country database of copper scrap and copper alloy scrap trade in the region. For purchases please contact mail@icsg.org.

ICSG SECRETARY GENERAL PRESENTS AT THE 11th ASIA COPPER CONFERENCE IN CHINA

Mr Don Smale, ICSG Secretary General, made a presentation on the current situation and outlook of the copper market at the Metal Bulletin 11th Asia Copper Conference, in Shanghai, in November 2015, which was part of the major CESCO Asia Copper Week.

ICSG PRESENTS ON COPPER SCRAP USE IN BARCELONA COPPER RECYCLING CONFERENCE 2015

Mr Carlos Risopatron, ICSG Director of Economics and Environment, delivered a presentation on recent trends in the use of recycled copper in smelters and fabricators in the Metal Bulletin Copper Recycling Conference in Barcelona, Spain on 17-18 June 2015. He also visited La Farga La Cambra copper wire rod and tube plant and attended the CRU Wire and Cable Conference in Barcelona in the same week.

ICSG STATISTICAL MANAGER PRESENTS AT ANTAIKE COPPER CONFERENCE IN CHINA

Mr Shairaz Ahmed, ICSG Manager of Statistical Analysis, presented a detailed outlook for the global copper market at the CNIA/Antaike China International Copper Conference 2015 on 21-23 October in Nanning, China.

ICSG PRESENTS AT THE 2015 IRAN METALLURGICAL ENGINEERING CONFERENCE

Mr. Carlos Risopatron, ICSG Director of Economics and Environment, presented a detailed outlook for the global copper market in 2014-2015 and future perspectives for global copper mine supply in 2015-2020, at the ninth joint Congress of "Iranian Metallurgical Engineering" and "Iranian Foundrymen Scientific Societies" on 10-11 November 2015. The well-attended event was hosted by the Iran University of Science & Technology in Tehran. The ICSG officer also attended technical meetings and discussions with the National Iranian Copper Corporation (NICICO).

ILZSG NEW INTERACTIVE MINES AND SMELTERS INTERFACE ON THE ILZSG WEBSITE

In early 2014 ILZSG launched its Interactive Mines and Smelters Interface. The new interface is located on the ILZSG website and enables users to easily access information from the ILZSG mine and smelter databases. The system uses state-of-the-art technology to provide a user-friendly experience to users. Results of queries may be exported to pdf format and to print. A fact sheet containing useful detailed information is available for each mine/smelter including a map of its geographical location. Data is available on all openings and closures of mines and smelters from 2000 to the present as well as all mine and smelter projects currently committed or under consideration. The secretariat would welcome any feedback on this service regarding possible future improvements, addressed to paul_white@ilzsg.org or joao_jorge@ilzsg.org.

ILZSG SUPPORTS CNIA/ANTAIKE 17th CHINA INTERNATIONAL LEAD AND ZINC CONFERENCE

The 17th China International Lead and Zinc Conference and Exhibition was held from 4-6 November in Wuhan, China. The conference was hosted by China National Nonferrous Industry Association (CNIA) and organised by Beijing Antaike Information Development Company. As in the past, ILZSG was pleased to be able to support this important event and a paper on the topic of “The Global Lead and Zinc Market Outlook” was presented by Mr. Paul White, the Group’s Director of Market Research and Statistics. Details of the paper presented by Mr. White can be obtained from paul_white@ilzsg.org.

ILZSG PRESENTS AT IZA 2014 ZINC COLLEGE

The Group's Director of Market Research and Statistics, Mr. Paul White, made a presentation on "Zinc Industry Facts and Fundamentals" at the International Zinc Association's (IZA) 2014 Zinc College which was held in Udaipur, Rajasthan, India at the beginning of September. The college was attended by more than 80 people from a variety of backgrounds within the zinc industry. Other topics covered over the course of the college included Zinc and Health, Country Risk Analysis, Zinc Metal Marketing and Sales, Geology and Exploration and Sustainable Development. Copies of Paul White's paper are available at paul_white@ilzsg.org.

ILZSG SUPPORTS 2nd ASSOFERMET DAY AND STEEL ORBIS CONFERENCE

ILZSG was invited to present at the 2nd Assofermet Day and Steel Orbis Conference held in Milan on 21st November 2014. The conference provided an interesting and informative overview of different aspects of the European base metals and steel sectors including likely future trends and developments. During the course of the conference Mr. Paul White, Director of Market Research and Statistics at ILZSG, made a presentation on "Zinc and Copper from 2009 to Date: Reshaped Markets and Flows". Copies of this presentation are available from paul_white@ilzsg.org.

INSG PARTICIPATION IN FERROALLOYNET 7th INTERNATIONAL CHROME AND NICKEL PRODUCTS SUMMIT

FerroAlloyNet-7th China International Nickel & Cobalt Industry Forum was held in Hangzhou, China, from September 12-13. The INSG Manager of Statistical Analysis, Mr. Ricardo Ferreira, attended and made a presentation ON "The Outlook for the Global Nickel Market". For copies of the presentation please contact ricardo.ferreira@insg.org

Clear-Lead™ Mobile Barriers radiation shielding to protect workers and members of the public from electromagnetic radiation

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Forthcoming Events

MEETINGS, CONFERENCES and SEMINARS

The 2016 International Zinc Conference and Zinc Oxide Industry Conferences will be held February 21-24, 2016 in Phoenix, Arizona, US. The conference covers key industry trends and challenges. The 2016 International Zinc Oxide Industry Conference is being held in conjunction with the International Zinc Conference, providing an opportunity to learn about new research and market trends. Contact draymond@zinc.org.

The 15th European Lead Battery Conference (15ELBC) and Exhibition will be held at the Mediterranean Conference Centre, Valletta, Malta, 13-16 September 2016. For information on the International Lead Association conference, visit http://www.ila-lead.org/home or contact mcdermott@ila-lead.org

In this issue the photos selected reflect the theme of metals in health and medicine

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 are underway or have been completed recently.

NEW PROJECTS

THE SOCIAL ACCEPTANCE OF MINING AND SMELTING

Approval has been given to launch a project to examine the social acceptance of mining and smelting. A contract is expected to be awarded in the near future.

NEWLY-COMPLETED PROJECTS

SECOND REPORT ON BY-PRODUCT METALS OF COPPER, LEAD, ZINC AND NICKEL

The update of the report on by-product metal was published in December 2015 and covers the production, usage, trade and outlook for 17 by-products metals. This study expands on the 2012 report and provides information on sources of by-product metals, refinery processes, recycling, markets, contracts, and pricing, uses, government regulations, REACH status, government stockpiles and trade restrictions. Historic market balances for many metals are provided. The publication includes a directory of mining and producing companies.

COMPLETED PROJECTS

COBALT AS A BY-PRODUCT OF COPPER AND NICKEL

This joint report of the International Nickel Study Group and the International Copper Study Group 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.

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.

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 carried out for the Study Groups by RMG of Sweden. 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.

Study Groups' Publications from Joint Projects

- ***Study Groups' Survey of Semifabricators in China***
- ***By-Products of Copper, Zinc, Lead and Nickel (2012 and updated edition 2015)***
- ***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***
- ***2015 Updated Report on By-products of Lead, Zinc, Copper and Nickel***

(More details on publications can be found in pages 10-14)

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PUBLICATIONS

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

NEW

By-Products of Lead, Zinc, Copper and Nickel
A joint report of the three Study Groups on the production, usage, trade and outlook for 17 by-product metals. Information on sources of by-product metals, refinery processes, recycling, markets, contracts, and pricing, uses, government regulations, REACH status, government stockpiles and trade restrictions is provided. Historic market balances for many metals are provided. Includes a directory of mining and producing companies. Metals covered are arsenic, bismuth, cadmium, cobalt, gallium, germanium, gold, indium, mercury, molybdenum, platinum group metals, scandium, silver, rhenium, selenium, tellurium and rare earths. 338 pages. *Published December 2015.*

NEW

ICSG 2015 Statistical Yearbook
The yearbook includes annual statistics on copper and copper products, their production, usage and trade by country, as well as stocks and exchange prices, providing a global view of supply and demand for the past 10 years. The Yearbook serves as a useful tool for consultations and analysis on the longer term evolution of world copper production, usage, stocks and prices. *Published November 2015*

NEW

Directory of Copper & Copper Alloy Fabricators (First Use) 2015. A global overview of companies and plants involved in the use of refined copper and scrap by fabricators. First users are mainly semis fabricators processing refinery shapes into semi-finished copper and copper alloy products. The report covers capacity at wire rod plants, ingot makers (for castings), master alloy plants, brass mills, and electrodeposited copper foil mills. This edition includes an update of Chinese, South East Asian, European, Russian, Indian and South American copper wire rod plants and projects. *Published September 2015*.

NEW

China Primary and Secondary Zinc Metal and Zinc Oxide Sectors
Prepared for the ILZSG by the BGRIMM Lilan Consulting Corp. Ltd, this report provides a comprehensive assessment of the production of both primary and secondary zinc in China including discussion of processes employed and raw material used. The report also provides and in depth overview of the Chinese zinc oxide sector. Much of the data has been sourced directly from zinc producers, consumers and traders. 44 pages. *Published December 2015*.

NEW

INSG World Directory of Nickel Production Facilities 2015
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 July 2015.*

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NEW

INSG Nickel in Batteries 2015

A comprehensive report on the use of nickel in batteries, drawing on data from both government and private sources. Describes the principal types of nickel-containing batteries, including those in hybrid and electric vehicles. Information on the various nickel containing batteries in terms of cost and energy density is provided, as is information on the environmental regulations impacting nickel batteries. A list of major producers of nickel-containing batteries with web addresses is included. 29 Pages. *Published July 2015*.

NEW

Lead-Acid Industrial Batteries

This 77 page report provides details on markets for both motive and standby power batteries and also the emerging market for energy storage to support the deployment of renewable energy sources. Data on sales, output in kWh and lead tonnage are furnished. Different types of lead-acid batteries are assessed as well as competing chemistries such as nickel-cadmium and lithium-ion. Forecasts for growth by sector and region are included as are profiles of 40 industrial lead-acid battery producers. *Published May 2015.*

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 July 2015*.

NEW

Capacity and Industrial Use of Refined Copper and Scrap in Indian Subcontinent, ASEAN and Oceania 2015

This regional study completed in May 2015 covers over 3.75 million tonnes of copper and copper alloy semi-fabrication capacity in the region and a regional output of more than 2.65 kt for 2013. Reported fabrication output includes copper products such as copper wire rod and copper fabricated products including tube, sheet and rod, as well as brass mill products including copper alloy tube, copper alloy sheet and copper alloy rod. Fabrication reported plant by plant and including copper alloys and copper products. *Published May 2015.*

NEW

Zinc Recovery from Electric Arc Furnace Dust

This 62 page report, prepared for the ILZSG under contract, looks at aspects of the recovery of zinc from Electric Arc Furnace (EAF) dust, an increasingly significant source of secondary zinc. The advantages and disadvantages of the various processes used to treat EAF dust, including the Waelz Kiln and Rotary Hearth Furnace, are assessed. Information is provided on volumes of EAF dust being generated and recovered. An appendix provides a listing of dust treatment facilities by country. *Published February 2015.*

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NEW – Continuously Updated!

Lead and Zinc Mine and Smelter Database

An interactive interface on the ILZSG website provides access to the comprehensive records contained in the extensive ILZSG mine and smelter databases. Information on operating mines and smelters with contact details, capacities and location. Listings of both currently committed and under consideration 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

The World Copper Factbook 2015

A comprehensive overview of copper, with statistics, graphs, flowcharts and other information providing details on production, usage, recycling, definitions and history. Published September 2015.

NEW

Primary Nickel Usage: New Frontiers in China

This publication was commissioned by INSG and carried out by Beijing Antaike Information Development Co. and provides a comprehensive overview of primary nickel usage in China. The production of stainless steel in China for the period of 2011-2018 by series - 200, 300 and 400 - is detailed with information on the top 10 stainless steel producers and top 10 NPI producers. Also, nickel usage in non stainless steel is broken down by main groups of first use of nickel - batteries, plating, nickel based alloys, alloy steels – and by type of product used - cathode, salts, scrap. Chinese NPI projects in Indonesia and elsewhere are discussed. *Published March 2015.*

The Chinese Primary and Secondary Lead Metal Sector

The Chinese lead industry has developed rapidly mainly as a consequence of increased demand for lead-acid batteries from the automotive, e-bike and telecommunication sectors. This comprehensive report, prepared for ILZSG by Beijing Antaike Development Co., provides an in depth assessment of Chinese primary and secondary lead output with details on the main producers, availability and sources of raw materials and processes used for recycling lead-acid batteries. 51 pages plus a 35 page appendix. *Published December 2014.*

Lead and Zinc New Mine and Smelter Projects 2015

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 spread throughout all the continents 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. P*ublished January 2014*

Nickel – A Surface Technology Material

This study, carried out by Heinz Pariser on behalf of INSG, provides a comprehensive overview of the use of nickel in the plating and surface treatment industry, a sector accounting for about 10 percent of nickel usage. Several processes used in nickel plating are described, including electroplating, vapor deposition and zinc-nickel plating. Data is furnished on the industry by region and by major uses of plating such as the automotive sector, electro and electronics. 82 pages*. Published May 2014.*

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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.*

Middle East and North Africa Copper Use Study: Capacity and Industrial Use of Refined Copper and Scrap 2014
This regional study covers over 2.34 million tonnes of copper and copper alloy semi-fabrication capacity in the region with output reported of 1,731.3 kt for 2013. The 92 page report includes a plant by plant database, a country by country discussion of recent industrial copper use trends, and a country by country database of copper and copper alloy scrap trade in the region. Turkey, the United Arab Emirates and Saudi Arabia have the most installed capacity with Iran, Egypt and other countries also covered in the report. *Final version published November 2014*.

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.*

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.*

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 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.*

Environment and Health Controls on Lead
A review of current and proposed regulations controlling lead in works, lead in the atmosphere and lead in water in 34 countries. *Published 2014.*

Environmental and Health Controls on Zinc
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. *Published 2014.*

Environment, Health & Safety Regulations Relating to Nickel 2015
A compilation of environmental, health and safety (EHS) regulations affecting nickel. The listing is provided by country, state or province as well as separately for international organizations. Available in a spreadsheet format with web links to regulations in various jurisdictions. 42 pages. *Published April 2015*.

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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*.

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.*

*******COMING SOON******

Lead and Zinc New Mine and Smelter Projects 2016
This report will cover lead and zinc mines and smelters opened or closed during 2016, 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. *To be published January 2016*

ICSG 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. *To be published December 2015.*

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