



Metals Despatch

Newsletter of the International Metals Study Groups

July 2015, Issue No. 19

LEAD AND ZINC FORECAST

The outlook for World supply and demand for lead and zinc was presented during the ILZSG meetings held in Lisbon on 22 April 2015. Highlights include:

- ILZSG anticipates a rise in global **usage of refined lead metal** of 1.1% to 11.05 million tonnes in 2015. In China, growth is being adversely affected by a slowdown of sales in the e-bike sector which accounts for over 30% of domestic lead metal usage thus Chinese demand in 2015 is forecast to increase by a limited 1%. Usage in Europe this year is forecast to rise by 0.8% and in the United States by 1.2%.
- After declining by 7.9% in 2014, mainly due to lower Chinese output, **global lead mine production** is forecast to rise by 1.1% in 2015 to 5.05 million tonnes with expected rises in output in China, India, Mexico and Sweden partially balanced by reductions in Australia and Ireland.
- World **refined lead metal production** is expected to increase by 1.1% to 11.03 million tonnes in 2015. European output will benefit from increases in Belgium, Germany, Italy and the United Kingdom, where primary production was adversely affected by a reduction in the availability of bullion from Australia in 2014 as a consequence of a smelter fire at Mount Isa.
- Based on the latest information ILZSG anticipates that there will be a close balance between global refined lead supply and demand in 2015. Current figures indicate a small deficit of 17,000 tonnes.

- In 2015, global **demand for refined zinc metal** is forecast to rise by 3.7% to 14.14 million tonnes. After increasing by 8.7% in 2014 usage in China is expected to rise by a more modest 4.8% this year. European demand is forecast to rise by 2.4% and in the United States by 6%. Usage is also expected to be higher in Canada, India, Indonesia, Mexico and Turkey.
- It is anticipated that world **zinc mine supply** will increase by 3.7% to 13.84 million tonnes in 2015. In Europe, a reduction in Ireland as a consequence of the impending closure of Vedanta's Lisheen mine will be offset by increases in the Russian Federation, Spain and Sweden. Similarly in Australia, increased output at the McArthur River and Mount Isa mines will more than compensate for losses due to the closure of MMG's Century operation during the third quarter.
- Global **production of refined zinc metal** in 2015 is forecast to rise by 5.2% to 13.99 million tonnes. This increase will mainly be due to predicted further growth in Chinese output of 8.9% with ex-China production expected to rise by 2.4%.
- Detailed information collected from ILZSG member countries indicates that global demand for refined zinc metal will exceed supply by 151,000 tonnes in 2015. This deficit is lower than the October forecast with the difference primarily due to a downward revision to the expected levels of Chinese net imports of refined zinc metal.

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' MEETINGS

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

ICSG: 5 – 6 Oct. 2015, Lisbon, Portugal
INSG: 5 - 6 Oct. 2015, Lisbon, Portugal
ILZSG: 8 - 9 Oct. 2015, Lisbon, Portugal

Joint Study Groups' Seminar 9:00am to 5:30pm on 7 October 2015: "Mining and Metals in Latin America: Current Status and Future Prospects" Lisbon, Portugal

ICSG: Industry Advisory Panel, London, 15 October 2015

Contents in This Issue

Lead and Zinc Forecasts - Page 1
Upcoming 2015 Meetings Schedule - Page 1
Copper Forecasts - Page 2
Nickel Forecast - Page 2
Study Groups' Joint Seminar - Page 2
INSG Meeting Report - Page 4
ILZSG Meeting Report - Page 4
ICSG Meeting Report - Page 5
Recent Activities – Page 6
Forthcoming Events - Page 7
Joint Study Group Projects Update – Page 8
Study Groups' Publications - Pages 9 to 13

COPPER FORECAST

The International Copper Study Group (ICSG) met on 23 and 24 April 2015 in Lisbon and reviewed the current outlook and trends in World copper supply and demand. The following forecast was issued:

- ICSG projections for 2015 indicate that world refined copper production is expected to exceed apparent refined copper demand by 365,000 metric tonnes (t). According to ICSG projections for 2016, the copper market may show a second consecutive production surplus relative to demand. However this is expected to be lower at 230,000 t as demand growth outpaces production growth.
- After underperforming in 2014 with growth of just 2.4%, world mine production after adjusting for historical disruption factors is expected to increase by around 5% in both 2015 and 2016 to 19.5 Mt (million tonnes) and 20.5 Mt respectively. The increases will reflect expansions at existing operations, ramp-up in production from mines that have recently come on stream and output from a few new mine projects. Most of the new production is expected to be in the form of copper in concentrate.
- After increasing by 7% in 2014, world refined copper production in 2015 is expected to increase by around 4% year-on-year to 23.4 Mt on the back of capacity expansions at electrolytic plants in China (and to some extent from higher SX-EW capacity in Africa). Primary refined production (excluding SX-EW) is expected to grow by 6% this year benefiting from increased availability of concentrate while secondary production is forecast to decline by 2% on continued tightness in the scrap market. In 2016, world refined copper production is expected to grow further by around 2.5% to 24 Mt.
- Following growth of around 7% in apparent usage in 2014, ICSG expects world apparent refined usage in 2015 to increase by only 0.6% mainly because, although industrial demand growth in China is expected at around 4.5-5%, apparent demand in China is expected to increase by 1%. Usage in the rest of the world is expected to remain essentially flat. For 2016, the growth in apparent refined usage is expected at around 3% with underlying Chinese industrial demand growth expected at 5%. Usage in the rest of the world is expected to increase by about 2%.

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.



Brass Tubes – An alloy of Copper and Zinc

NICKEL FORECAST

The International Nickel Study Group (INSG) met on 20 and 21 April 2015 in Lisbon and reviewed the current outlook and trends in World nickel supply and demand. The following forecast was issued:

- World primary **nickel usage** was 1.78 Mt in 2013 and increased to 1.87 Mt in 2014. For 2015 INSG estimates an increase to around 1.94 Mt.
- World **primary refined nickel production** was 1.96 Mt in 2013, and increased to 1.99 Mt in 2014. INSG projects a decrease in production which could reach around 1.96 Mt in 2015. There is a degree of uncertainty in these figures in regard to Chinese nickel pig iron production. The estimates do not include any general adjustment factor for possible production disruptions.
- INSG members also discussed **market trends**. The implementation of the Indonesian export ban on nickel ore which took effect in January 2014 is expected to reduce further the nickel pig iron (NPI) production in China despite the increase in nickel ore exports from the Philippines that enabled Chinese nickel producers to keep producing at higher levels than previously foreseen. Limited NPI production is expected in Indonesia as progress in building up production facilities remains slow.

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, "Trade Policy Issues in Mining and Metals" was held on 22 April 2015 in Lisbon, Portugal. The seminar was a joint initiative of the International Lead and Zinc Study Group (ILZSG), the International Copper Study Group (ICSG) and the International Nickel Study Group (INSG).

The Seminar opened with a keynote address by Dr. Cosimo Beverelli, Economist and Trade Policy Expert at the World Trade Organisation (WTO). His presentation covered three areas: 1) Natural resources: definition and determination of trade patterns, 2) Trade policy instruments in natural resource sectors, and 3) WTO rules relating to export restrictions in natural resources. Ms. Caroline Boeshertz, Policy Officer, DG Trade, European Commission then gave a presentation on European Union trade policies for mining and metals entitled "Raw Materials and Trade – Global Challenges: The EU Trade Policy for Raw Materials". This was followed by a presentation by Mr. Sergio Hernandez, Executive Vice President, Chilean Copper Commission (Cochilco). Mr. Hernandez gave a presentation entitled "Chilean Trade Policy for Mining and Metals". Chile is a leading mining country and has an open economy. Ms. Barbara Fliess, Senior Trade Policy Analyst, OECD Trade and Agriculture Directorate, spoke on "Export Restrictions in Industrial Raw Materials Trade: Findings from OECD's Ongoing Work". The OECD seeks to contribute to policy dialogue on issues related to trade. Ms. Fliess provided a list of points guiding the work of OECD.

Ms. Katrien Delbeke, Director – Health, Environment & Sustainable Development, European Copper Institute (ECI), delivered a presentation entitled "Maritime Transport of Copper Concentrates - IMO Regulations". The presentation provided details of trade policy issues related to the maritime transport of concentrates. Mr. Ross Bartley, Environmental & Technical Director, Bureau of International Recycling (BIR) gave a presentation entitled "Trade & Environment Issues - Secondary or Recycled Materials - Upcoming Basel Convention Cop-12" in which he provided details on global trade in secondary or recycled material including materials affected by the Basel Convention. The Bureau of International Recycling (BIR) is the voice of the recycling industry at the international level. Mr. Anton Lof, Senior Consultant, SNL Metals & Mining/RMG, gave a presentation "Key Current Metals Trade & Tax Policy Issues" in which he reviewed key current metals trade policy issues and trends, including changes in trade policy measures such as taxation and royalty regimes. He also mentioned case studies of the Indonesian ore export ban, Indian iron ore and Zambian mining policy.

Following the presentations, the Chairman invited all speakers to take part in a brief discussion and invited questions from the audience. The Chairman noted that the presentations highlighted some of the challenges facing the mining and metals sector. He asked what actions are needed to improve trade policy.

The representative of the EU said that dialogue on trade issues is very important. Countries continue to restrict trade in raw materials, and this is done in part because governments want to demonstrate to the public that they are promoting the interests of the population. Communication and dialogue are needed to provide information on the results such actions will have. It was noted that dialogue is an important part of EU policy, in particular in its trade policy with China, and that a political/economic approach is required.

One delegate sought more details about the Chilean experience in successfully handling the significant revenues flowing from mining exports. Mr Hernandez replied that the public institutions and policies in Chile are stable and that rules are not changed drastically from one government to another. The country respects its international obligations, and this approach was very important to Chile's success. Dr Beverelli of the WTO concluded the discussion with several remarks on mining and employment.



Nickel-containing superalloys are used in turbine blades of jet engines (AMG Superalloys)

The Chairman closed the seminar noting that the presentations and discussions had been very useful in aiding all participants to better understand the challenges that exist. The Chairman underlined the importance of holding events such as the current seminar and said that the Study Groups would continue to develop joint seminars focused on specific important non-ferrous metals producing and using countries and regions.

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).



Copper Nickel Alloy Wire
(source: kalikund-steel.com)

INSG 25th SESSION 20-21 APRIL 2015

Delegates from INSG member countries, industry and observing countries/organisations met in Lisbon on 20-21 April for the 25th INSG Session 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. Loïc Racon of the International Chrome Development Association spoke on the "Overview of the Global Chrome Market". A presentation by Mr. Chris Broadbent of the consulting firm Wardell Armstrong was entitled "The Application of the Vanyukov Process to Process Low Grade Nickel Ore at Gornastai, Kazakhstan". Mr. Broadbent was speaking on behalf of MMK Yertis Ferronickel Works LLP of Kazakhstan. Mr. Seo Ou, General Manager of Ganzhou Highpower Technology, a subsidiary of Highpower Group, spoke on the use of nickel-containing batteries in electric cars. Highpower, headquartered in Shenzhen, China specializes in rechargeable lithium and nickel batteries. Mr. Matt Johnson, External Relations Manager at the Eagle Mine in Michigan, United States, spoke on the operation of this recently-opened mine, the only nickel mine in the US. Mr. Marco Vallini, Public Policy Specialist at the Nickel Institute, made a presentation entitled, "Global Regulatory Update on Nickel and Ni Compounds".

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. Nic Brown, Head of Commodities Research, Natixis, United Kingdom, gave a presentation on the "Outlook for the Global Nickel Market". Mr. Kai Hasenclever, Director of Economics,

Statistics and Long Products, ISSF, Belgium, made a presentation on developments in the world of stainless steel and its markets. Mr. Markus Moll, Managing Director SMR Group, Austria gave a presentation on: "Current STS Market Update and Focus on Competitiveness".

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 Ms. Xu Aidong, Chief Analyst Nickel, Beijing Antaite Information Development Co. Ltd., China P.R. with a presentation entitled "Primary Nickel Usage: New Frontiers in China". Mr. Evan Spencer, CEO, Asian Mineral Resources, Vietnam gave a presentation entitled "Launch Platform for a World-Class Nickel District". Finally, Mr. Anil Shah, President, Ni-Met Metals Inc., Canada, spoke on "India's Nickel & Stainless – Past, Present & Future".

ILZSG 22 APRIL 2015 MEETING

The International Lead and Zinc Study Group held its latest meeting in Lisbon on 22 April 2015. The Director 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 22 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 "The Outlook for the Irish Lead and Zinc Sector" by Dr Eibhlin Doyle, Principal Geologist, Department of Communications, Energy and Natural Resources, Ireland. This was followed by a presentation on "New Regulations for the Lead-Acid Battery Industry in China" by Professor Yeo Lin, School of Public Affairs, Zhejiang University, China.

The Study Group's Economic and Environment Committee met on 22 April. The Committee received a report from Dr. Andy Bush, Managing Director of the International Lead Association highlighting the activities surrounding the 19th International Lead Conference (Pb2015) held in Lisbon April 23-24. This was followed by a presentation by Mr. Robin Bhar, Head of Metals Research at Société Générale who spoke on volatility in the metals markets.

TURKEY JOINS ILZSG



Turkey joined ILZSG with effect from April 2015 bringing membership to 29 countries. Turkey is a producer of both lead and zinc, with 2014 mine production of 211,000 tonnes of zinc and 65,000 tonnes of lead. Welcome Turkey!

ICSG APRIL 2015 23rd SESSION IN LISBON

Representatives from ICSG member governments and companies, observer governments and organizations attended the International Copper Study Group's 23rd Session at ICSG Headquarters in Lisbon on 23-24 April 2015. 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.

In the ICSG Environmental and Economic Committee Mr. Carlos Risopatron, ICSG Director of Economics and Environment, summarized the most recent data and trends on production, use and trade of fabricated copper and copper alloy fabricated products, and their main raw materials: copper scrap, copper alloy scrap and refined copper. He introduced advances in the ongoing study of copper use in fabrication of wire rod, tubes, other semis and brass mill products in the Indian subcontinent, ASEAN countries and Oceania.

Mr Colin Bennett from the International Copper Association (ICA), delivered a detailed presentation on the outcomes of ICA's work examining the end use of semi-fabricated copper on a global basis. Usage trends in the major market, China, and elsewhere were reported. Mr. Bennett concluded that the global copper content end use has grown from around 22 Mt-Cu in 2009 to over 26 Mt-Cu in 2013.

Mr Ian Littlewood, Metals Analyst, Aventis Asset Management New York, US, delivered a presentation on key factors determining current developments in the copper market, including the impact of traders and other participants in the market. Financial regulatory initiatives being introduced, in the United States and EU in particular, were also discussed by the analyst.

Mr Paul Gait, Senior Analyst, Bernstein Research, London, UK, delivered a presentation on the longer term availability of copper. He referred to current estimates of copper reserves and resources, and looked at geological factors expected to increase future mine supply growth. He also considered some other copper mine supply issues such as productivity and ore grades.

Ms Chiara Venturini, Director, Global e-Sustainability Initiative (GeSI), outlined the current situation of the conflict minerals issue, described the GeSI Conflict Free Sourcing Initiative and its relation with other global initiatives as Dodd-Frank/SEC, GeSi CFSI, OECD, ITRI iTSCi, the EU legislative process, and the US government databases.

Mr Carlos Risopatron, ICSG Director of Economics and Environment, summarized the outcomes of the 2015 ICSG Annual Recyclables Survey, distributed to member countries during the Session. World use of recycled copper increased 0.8% annually in 2013 to close to 8.5 Mt-Cu, and was estimated to fall 2.6% to 8.3 Mt-Cu in 2014 based on preliminary data. China achieved a peak use of recycled copper in 2011 with more than 3 Mt-Cu with less recycled copper use then reported for 2012-2014.

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.

Mr. Wang Huajun, Vice Secretary-General at China Nonferrous Metals Industry Association (CNIA) and Mr. Li Yusheng, Deputy Director General, CNIA, made a combined presentation on Chinese Copper Statistics and an Overview of the Chinese Copper Market for 2015/2016. Mr. Nick Pickens, Senior Research Manager for copper mine costs, Wood Mackenzie, made a presentation on copper mine costs and the effect of declining oil prices on copper industry margins.

Mr. Shairaz Ahmed, ICSG Manager of Statistical Analysis gave a presentation on The Copper Industry in the Balkans region as part of the Joint Study of the Copper, Lead, Zinc and Nickel Industries in the Balkan Region being undertaken by the three Study Groups. Ms Ana Rebelo, ICSG Director of Market Research and Statistics, presented a brief summary showing the main developments in world copper mine and refinery capacity until 2018.

ICSG PUBLISHES NEW SURVEY ON COPPER USE IN ASEAN, INDIA AND OCEANIA IN 2015

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.

The 2015 survey is now available for sale to ICSG member country/non-member country clients at a price of €400/€600 respectively. The 2014 Middle East and North Africa copper use survey is also available at a discount price, and remains the most complete copper wire rod survey publicly available on MENA. To order: mail@icsg.org

ICSG ATTENDS CHILE CESCO WEEK 2015

In April 2015 the ICSG Director of Economics represented the Study Group at the major annual CESCO copper industry event. He also had meetings with the International Copper Association, visited COCHILCO, and attended GFMS Copper Survey 2015 and other related events in Chile.

ICSG AT WIRE AND CABLE AND COPPER RECYCLING CONFERENCES IN SPAIN

In June 2015 the ICSG Director of Economics represented the Study Group at two conferences held in Barcelona, Spain: CRU Wire and Cable and MB Copper Recycling Conferences. In the second event he delivered a detailed presentation on the use and trade of recycled copper. Selected presentations can be requested from: risopatron@icsg.org.

ILZSG PAPER PRESENTED AT METAL BULLETIN'S 7th WORLD LEAD CONFERENCE

A paper discussing "Global Lead Supply: Recent Trends and Short Term Outlook" was presented by Paul White, ILZSG Director of Market Research and Statistics at Metal Bulletin's 7th World Lead Conference which was held in Milan, Italy from 10 to 12 March this year. Anyone interested in receiving a copy of this paper should contact the secretariat at paul.white@ilzsg.org.

ILZSG PRESENTS AT IZA'S 2015 INTERNATIONAL ZINC CONFERENCE AND ZINC OXIDE INDUSTRY CONFERENCE

A paper entitled "Zinc Industry Fundamentals – An Overview and Analysis" was presented by Paul White, ILZSG Director of Market Research and Statistics, at the IZA's 2015 International Zinc Conference and Zinc Oxide Industry Conference held in Orlando, Florida from 15 to 18 February. The paper discussed the structure of the industry, recent supply and demand trends in the zinc market and an overview of the Group's latest forecasts. Copies are available from the secretariat at paul.white@ilzsg.org.



Lead antimony alloy

THE GLOBAL LEAD MARKET – FACTS, FORECASTS AND FUNDAMENTALS

ILZSG Director of Market Research and Statistics, Paul White, delivered a presentation focused on trends in lead supply, including a detailed review of ongoing projects, at the International Lead Association's (ILA) 19th International Lead Conference which was held in ILZSG's home city of Lisbon, Portugal from 22 to 24 April. Copies of this paper are available from the secretariat at paul.white@ilzsg.org.

ILZSG PRESENTS AT METAL BULLETIN'S 19th ZINC AND ITS MARKETS SEMINAR

Mr. Joao Jorge, ILZSG Manager of Statistical Analysis, presented a paper on "Secondary Zinc as Part of the Supply Chain and the Rise of EAF Dust Recycling" at Metal Bulletin's 19th Zinc and its Markets Seminar that was held in Helsinki, Finland from 5 to 7 May. The paper, which was largely based on the recently published ILZSG report "Zinc Recovery from Electric Arc Furnace (EAF) Dust", discussed trends in EAF steel and dust output, EAF dust processing, Waelz zinc oxide production as well as likely future developments in this area. Further information is available from joao.jorge@ilzsg.org.

MINING JOURNAL AND STAINLESS STEEL WORLD MAGAZINE PUBLISH INSG ARTICLES

INSG staff once again collaborated in writing an article for publication in the Mining Journal. The article examines the world nickel market in 2014 and the outlook for 2015. The article was published in the 15 May 2015 edition of Mining Journal.

Two INSG articles have been published by the "Stainless Steel World Magazine" in March 2015 and June 2015 respectively. The first was on changes in nickel production capacities based on the information of the "World Directory of Nickel Production Facilities -2014" and the second was on the nickel market developments in 2014 and 2015. The secretariat has distributed copies to all INSG member country delegations.

ILZSG PARTICIPATION IN INTERGALVA

The Director of Economics and Environment for ILZSG, Curtis Stewart, made a presentation on the "Recovery of Zinc from EAF Dust" at the Intergalva conference in June 2015 in Liverpool. A copy of the presentation is available from the secretariat.

This edition of Metal Despatch features images of alloys containing the Study Group metals.

Forthcoming Events

MEETINGS, CONFERENCES and SEMINARS

The China Nonferrous Metals Forum, will be held on 13 October 2015 in London, hosted by China Nonferrous Metals Industry Association (CNIA)

<http://www.chinania.org.cn/uploadfile/2015/0624/undun/03.html>

*On 21-23 October 2015 China CNIA and Antaike will host the annual **Chinese International Copper Conference** in the city of Nanning, China. ICSG will provide support for the event with a presentation on The Copper Market Outlook to be delivered by the ICSG Manager of Statistical Analysis*

*China CNIA and Antaike will host the 18th **China International Lead & Zinc Conference** in Xi'an, Shanxi on 3-5 November 2015*

*The third **Asia Copper Week** including the CESCO Asia Copper Dinner 2015 will be held in Shanghai on 17-19 November. ICSG will be represented by the Secretary-General.*

<http://www.asiacopperweek.com/>

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

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

Work on the update of the report on by-product metal is now in progress and it is anticipated that a report will be made available at the October meeting with the final report completed by the end of the year.

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.

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.

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 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 9-13)



PUBLICATIONS

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

International Copper Study Group (ICSG)
Tel: + 351 21 351 3870
Fax: + 351 21 352 4035
e-mail: mail@icsg.org
Website: www.icsg.org

International Lead & Zinc Study Group (ILZSG)
Tel: + 351 21 359 2420
Fax: + 351 21 359 2429
e-mail: sales@ilzsg.org
Website: www.ilzsg.org

International Nickel Study Group (INSG)
Tel: + 351 21 356 7030
Fax: + 351 21 356 7039
e-mail: insg@insg.org
Website: www.insg.org

ILZSG Member States:
[Australia](#), [Belgium](#), [Brazil](#),
[Bulgaria](#), [Canada](#), [China](#),
[European Union](#),
[Finland](#), [France](#),
[Germany](#), [Iran](#),
[Ireland](#), [Italy](#),
[Japan](#), [Korea](#),
[Mexico](#), [Morocco](#), [Namibia](#),
[Netherlands](#), [Norway](#), [Peru](#),
[Poland](#), [Portugal](#),
[Russian Federation](#),
[Serbia](#),
[Sweden](#),
[Thailand](#), [Turkey](#),
[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](#)

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

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

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.*

International Copper Study Group (ICSG)

Tel: + 351 21 351 3870
Fax: + 351 21 352 4035
e-mail: mail@icsg.org
Website: www.icsg.org

International Lead & Zinc Study Group (ILZSG)

Tel: + 351 21 359 2420
Fax: + 351 21 359 2429
e-mail: sales@ilzsg.org
Website: www.ilzsg.org

International Nickel Study Group (INSG)

Tel: + 351 21 356 7030
Fax: + 351 21 356 7039
e-mail: insg@insg.org
Website: www.insg.org

ILZSG Member States:

[Australia](#), [Belgium](#), [Brazil](#),
[Bulgaria](#), [Canada](#), [China](#),
[European Union](#),
[Finland](#), [France](#),
[Germany](#), [Iran](#),
[Ireland](#), [Italy](#),
[Japan](#), [Korea](#),
[Mexico](#), [Morocco](#), [Namibia](#),
[Netherlands](#), [Norway](#), [Peru](#),
[Poland](#), [Portugal](#),
[Russian Federation](#),
[Serbia](#),
[Sweden](#),
[Thailand](#), [Turkey](#),
[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](#)

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.*

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

Primary Nickel Usage: New Frontiers in China

This publication was commissioned by INSG and carried out by Beijing Antaika 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 Antaika 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. *Published 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.*

International Copper Study Group (ICSG)
Tel: + 351 21 351 3870
Fax: + 351 21 352 4035
e-mail: mail@icsg.org
Website: www.icsg.org

International Lead & Zinc Study Group (ILZSG)
Tel: + 351 21 359 2420
Fax: + 351 21 359 2429
e-mail: sales@ilzsg.org
Website: www.ilzsg.org

International Nickel Study Group (INSG)
Tel: + 351 21 356 7030
Fax: + 351 21 356 7039
e-mail: insg@insg.org
Website: www.insg.org

ILZSG Member States:
[Australia](#), [Belgium](#), [Brazil](#),
[Bulgaria](#), [Canada](#), [China](#),
[European Union](#),
[Finland](#), [France](#),
[Germany](#), [Iran](#),
[Ireland](#), [Italy](#),
[Japan](#), [Korea](#),
[Mexico](#), [Morocco](#), [Namibia](#),
[Netherlands](#), [Norway](#), [Peru](#),
[Poland](#), [Portugal](#),
[Russian Federation](#),
[Serbia](#),
[Sweden](#),
[Thailand](#), [Turkey](#),
[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](#)

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.*

Directory of Copper & Copper Alloy Fabricators (First Use) 2014.

This is a global overview of companies and plants involved in the first use of copper. First users are mainly semis fabricators processing refinery shapes into semi-finished copper and copper alloy products. The report covers wire rod plants, ingot makers (for castings), master alloy plants, brass mills, and electrodeposited copper foil mills. This edition includes an update of Chinese, Russian, India and Brazilian copper wire rod plants and projects. *Published September 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.*

The World Copper Factbook 2014

A comprehensive overview of copper, with statistics, graphs, flowcharts and other information providing details on production, usage, recycling, definitions and history. *Published September 2014.*

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 August 2014.*

ICSG 2014 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 October 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.*

International Copper Study Group (ICSG)
Tel: + 351 21 351 3870
Fax: + 351 21 352 4035
e-mail: mail@icsg.org
Website: www.icsg.org

International Lead & Zinc Study Group (ILZSG)
Tel: + 351 21 359 2420
Fax: + 351 21 359 2429
e-mail: sales@ilzsg.org
Website: www.ilzsg.org

International Nickel Study Group (INSG)
Tel: + 351 21 356 7030
Fax: + 351 21 356 7039
e-mail: insg@insg.org
Website: www.insg.org

ILZSG Member States:
[Australia](#), [Belgium](#), [Brazil](#),
[Bulgaria](#), [Canada](#), [China](#),
[European Union](#),
[Finland](#), [France](#),
[Germany](#), [Iran](#),
[Ireland](#), [Italy](#),
[Japan](#), [Korea](#),
[Mexico](#), [Morocco](#), [Namibia](#),
[Netherlands](#), [Norway](#), [Peru](#),
[Poland](#), [Portugal](#),
[Russian Federation](#),
[Serbia](#),
[Sweden](#),
[Thailand](#), [Turkey](#),
[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](#)

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.*

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.*

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.*

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.*

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.*

International Copper Study Group (ICSG)
Tel: + 351 21 351 3870
Fax: + 351 21 352 4035
e-mail: mail@icsg.org
Website: www.icsg.org

International Lead & Zinc Study Group (ILZSG)
Tel: + 351 21 359 2420
Fax: + 351 21 359 2429
e-mail: sales@ilzsg.org
Website: www.ilzsg.org

International Nickel Study Group (INSG)
Tel: + 351 21 356 7030
Fax: + 351 21 356 7039
e-mail: insg@insg.org
Website: www.insg.org

ILZSG Member States:
[Australia](#), [Belgium](#), [Brazil](#),
[Bulgaria](#), [Canada](#), [China](#),
[European Union](#),
[Finland](#), [France](#),
[Germany](#), [Iran](#),
[Ireland](#), [Italy](#),
[Japan](#), [Korea](#),
[Mexico](#), [Morocco](#), [Namibia](#),
[Netherlands](#), [Norway](#), [Peru](#),
[Poland](#), [Portugal](#),
[Russian Federation](#),
[Serbia](#),
[Sweden](#),
[Thailand](#), [Turkey](#),
[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](#)

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.*

To place an order or for further information about the above and other publications published by the International Metals Study Groups please contact: sales@ilzsg.org for ILZSG reports, mail@icsg.org for ICSG reports, and insg@insg.org for INSG reports.