COPPER

India is among the top 20 major producers of copper globally. Over 30 per cent of India's copper demand comes from the telecom sector and 26 per cent from the electrical sector in India. In addition, the building and construction, engineering, transport and consumer durables sectors are major consumers of copper in India. These sectors stand to benefit the most from lower prices of copper. During the last few years, India's switch from net importer to exporter is due to a rise in production by three companies: Sterlite Industries, Hindalco, and Hindustan Copper. Hindalco and Sterlite industries account for more than 80 per cent of India's total copper production. The Indian industry imports raw copper from Chile, Indonesia, Australia, and Canada and exports finished products to various destinations.

A child born today will use approximately 794 Kilograms of copper during his or her lifetime in housing, transportation, electrical use and consumer products — everything from mobile phones to tablet computers to hybrid vehicles.

Copper is interesting because physical and investment buyers both account for significant proportions of physical copper demand. It's hard to overstate the importance of copper prices, both to numerous industries as well as the global economy. In the U.S., demand for products made of copper, 60 per cent of which is used to make wire, comes primarily from four sectors. One is construction. A second source of copper demand comes from utilities and companies that own and operate the vast transcontinental high-power lines that crisscross the nation and constitute the bulk power grid. A third source of copper demand is manufacturers of electronic products like smart phones and electronic industry. A fourth industry that buys large amounts of copper products is the car and truck industry. The average automobile, for example, contains nearly one mile of copper wiring, while the total weight of copper in cars ranges from 50 pounds for compacts to as much as 100 pounds for luxury and hybrid cars.

Domestic Scenario

India is not self-sufficient in the resources of copper ore. In addition to domestic production of ore and concentrates, India imports copper concentrates for its smelters. The domestic demand of copper and its alloys is met through domestic production, recycling of scrap and by Imports. India also provides a very compelling case for copper demand and one only has to look as far as their power needs. According to the International Energy Agency, India's power production needs to rise by 15-20% annually and to meet that, India needs to invest $1.25 trillion by 2030 into energy infrastructure. From this new infrastructure, India's annual copper demand is expected to more than double.

Hindalco (unit of Birla Copper) and Sterlite Industries (India) Ltd, the major copper producers in the Private Sector rely on imported copper concentrates. These companies own copper mines in other countries as well. Another Private Sector company, Jhagadia Copper Ltd, also produces copper based on secondary route.

Major companies producing Copper in India

Sl. No.	Name	State	District
1	Hindustan Copper Ltd.	Jharkhand, Maharashtra	Singhbhum (East), Raigad
2	Hindalco Industries Ltd	Gujarat	Bharuch
3	Sterlite Industries (India) Ltd	Tamil Nadu Dadra & Nagar Haveli	Thoothukudi Chinchpada (Silvassa)

Production of Copper Ore and Concentrates

The production of copper ore at 3.64 million tonnes in 2012-13 increased by 5 per cent as compared to that in the previous year. The metal content in the ore produced in 2012-13 works out to 32,505 tonnes as against 33,716 tonnes in 2011-12. During the year under review 3.62 million tonnes of ore was treated for obtaining copper concentrates as against 3.59 million tonnes in 2011-12.

Production of Copper, 2010-11 to 2012-13

Year	Copper blister	Copper cathodes	Copper CCWR*
2010-11	14245	512124	300416
2011-12	19473	504677	287550
2012-13(P)	17455	493519	285051

*CCWR- Continuous Cast Wire Rods

Production of copper concentrates at 123,655 tonnes in 2012-13 decreased by about 5 per cent as compared to that in the previous year. Madhya Pradesh was the leading producer of copper concentrates, accounting for about 55 per cent of the production during 2012-13, followed by Rajasthan with 35 per cent and Jharkhand with 10 per cent production. The number of reporting mines in 2012-13 was 5 as against 4 mines in the previous year.

Production of Copper (Cathodes), 2011-12 and 2012-13)

State	Plant	2011-12 Quantity	2012-13 (P) Quantity
Gujarat	Hindalco	330047	314941
Jharkhand	Surda ICC	18203	17281
Tamil Nadu	Sterlite	156427	161297
India	Total	504677	493519

Production of Copper (CCWR), 2011-12 and 2012-13

State	Plant	2011-12 Quantity	2012-13 (P) Quantity
Gujarat	Hindalco	144781	145350
Maharashtra	HCL Taloja	26308	20252
Tamil Nadu	Sterlite	116461	119449
India	Total	287550	285051

Hindustan Copper Ltd. produces copper metal from the ore produced at their captive mines and from imported Cu concentrate. Sterlite Industries (India) Ltd and Hindalco Industries Ltd produce copper metal from imported copper concentrates. The production of copper blister decreased by 10% and copper continuous cast wire rods registered a decrease of 1% in 2012-13 as compared to previous year. Similarly, production of copper cathodes was decreased by 2%. Production of copper electrolytic wire bars has not been reported for last three years.

Grade Analysis

During the year copper content in the ore produced was 0.89 per cent Cu against 0.97 per cent in year 2011-12. All India average metal content of ore treated during 2012-13 works out to 0.88 per cent Cu as against 0.96 per cent in the preceding year. The copper content in the ore treated varies from state to state. It was 0.93 per cent Cu in Jharkhand, 0.90 per cent Cu in Madhya Pradesh, and 0.83 per cent Cu in Rajasthan. The average metal content in the concentrate produced works out to 23.74 per cent Cu in 2012-13 as against 24.05 per cent Cu in the previous year. The copper concentrate produced in Madhya Pradesh in 2012-13 was of the highest grade in the country 27.60 per cent Cu followed by Jharkhand 25.47 per cent Cu and Rajasthan 17.19 per cent Cu. The average daily employment of labour in copper mines in 2012-13 was 2,918 as against 2,774 in the preceding year.

Grade/Designation of Copper and their Refinery Shapes

Grades/ Designations	Type of Copper	Form of Refinery Shapes Available from Refiners				
		Wire Bars	Billets	Cakes	Ingots and Ingot Bars	Cathodes
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cu - CATH - 1	Electrolytic cathode	-	-	-	-	x
Cu - CATH - 2	Electrolytic cathode	-	-	-	-	x
ETP	Electrolytic tough pitch	x	x	x	x	-
FRHC	Fire-refined high conductivity	x	x	x	x	-
FRTP-1	Fire-refined tough pitch	-	x	x	x	-
FRTP-2						
DHP	Phosphorized, high residual phosphorus	x	x	x	-	-
ATP	Arsenic, tough pitch	-	x	x	-	-
DPA	Phosphorized, arsenical	-	x	-	-	-
x commercially available						

Source: Bureau of Indian Standards

Horizontally cast wire bars of various nominal masses shall conform to the appropriate dimensions and tolerances given in the following table.

Masses and Dimensions of Horizontally Cast Wire Bars

Dimensions	Tolerances	Mass, kg					
		91	102	113	120	125	136
L (mm)	± 14 mm	1370	1370	1370	1370	1370	1370
L_1 (mm)	± 6 mm	150	150	150	150	150	150
h (mm)	± 6 mm	90	100	100	110	110	120
h_1 (mm)	± 6 mm	25	25	25	25	25	25
b (mm)	± 6 mm	100	100	110	110	110	110
b_1 (mm)	± 6 mm	90	90	100	100	100	100
R (mm)	± 6 mm	16	16	25	25	25	25
R_1(mm)	± 6 mm	16	16	16	16	16	16
R_2 (mm)	± 6 mm	40	40	40	40	40	40
a (degree)	± 2°	10	10	10	10	10	10
β (degree)	± 2°	10	10	10	10	10	10
γ (degree)	± 1°	3	3	3	3	3	3

Source: Bureau of Indian Standards

The tolerances on mass and dimensions for refinery shapes other than horizontally cast wire bars are given in the following table.

Tolerances on Mass and Dimensions for Other Refinery Shapes

Refinery Shape	Tolerances					
	Mass	Diameter	Length	Width and thickness	Other dimensions	Maximum deviation from straightness per 1 000 mm length
	%	mm		mm	mm	mm
Billets	± 5	± 3	± 2 % of ordered length	-	-	4
Vertically continuously Cast wire bars	± 5	-	-	± 3	± 6	-
Vertically statically Cast wire bars	± 5	-	-	± 6	± 6	-
Cast cakes Width, thickness Up to 200 mm	± 5	-	-	± 3	-	4
Width, thickness Over 200 mm	± 5	-	-	± 6	-	4
Ingots	± 10	-	-	-	-	-

Source: Bureau of Indian Standards

Major Companies Operating in India

HCL, a public sector company, was the only producer of primary refined copper till 1997. The installed capacity for refined copper production at its two integrated smelters is around 51,500 tpy. Now, the other two producers of primary copper from imported concentrates are M/s. Hindalco Industries Ltd and Sterlite Industries of Vedanta Group, having annual capacities of 500,000 tonnes and 400,000 tonnes of refined copper, respectively. Jhagadia Copper Ltd (formerly SWIL Ltd) has become operational with 50,000 tpy capacity of copper cathodes and additional capacity of 20 thousand tpy of copper anode. The total installed capacity is thus 1,001,500 tpy. Besides, continuous cast wire rod plants are operated by HCL, Sterlite and Hindalco. In addition, M/s. TDT presently Alchemist Metals Ltd, Rewari, Haryana and M/s. Finolex also have continuous cast wire rod plants based on imported copper. Details regarding smelter capacity of copper cathode is given in the adjacent table.

Copper smelting capacity in India

Smelter	Annual Capacity
1. Hindustan Copper Ltd.	51.5
i) Khetri Copper Complex, Rajasthan.	31
ii) Indian Copper Complex, Jharkhand.	20.5
2. M/s. Sterlite Industries (India) Ltd., Tamil Nadu.	400
3. M/s. Hindalco Industries Ltd, Gujarat.	500
TOTAL	**1001.5**

Trends in Indian Consumption

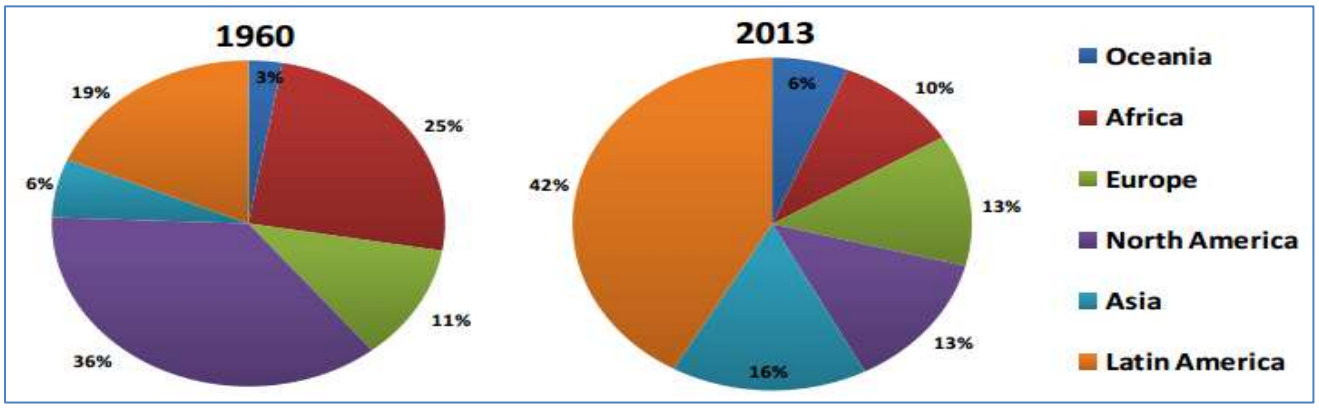
As per the estimate of ICSG, the share of electrical and telecommunication industry in total consumption is 56%, followed by Transport (8%), consumer durables (7%), Building and Construction (7%), General Engineering goods (6%) and other industries including Process Industries (16%). The apparent availability of copper for internal consumption in various industries have been computed on the basis of production of refined copper (cathodes), imports and exports of copper (refined). Copper is also traded in the form of alloys but have not been considered for arriving at apparent availability of copper. During 2012-13 the exports of refined copper was slight more than the imports, and the availability of refined copper decreased from 285,063 tonnes in 2011-12 to 254,186 tonnes in 2012-13.

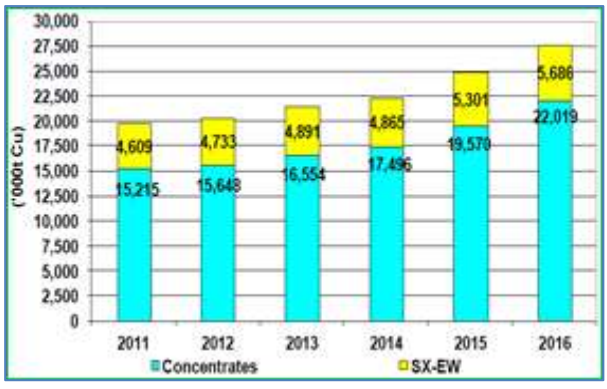
Apparent Availability of Copper for Domestic (Based on production of refined Copper, Imports and Exports)

Particulars	2011-12	2012-13
Total Production* (Cathodes)	504677	493519
Total Imports (Copper refined)	18524	23977
Total Exports (Copper refined)	238138	263310
Apparent Availability	285063	254186

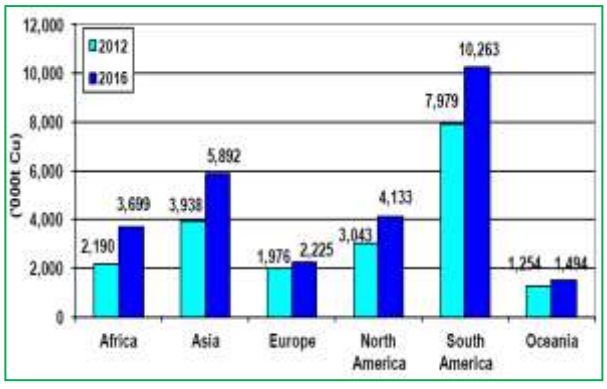
International Scenario

From less than 750,000 tonnes copper in 1960, copper mine production in Latin America surged to over 7.5 million tonnes in 2013, representing 42% of the global total. Asia has also exhibited significant growth. The region's share of global production has increased from just 6% to 16% over the respective period.





Source: ICSG

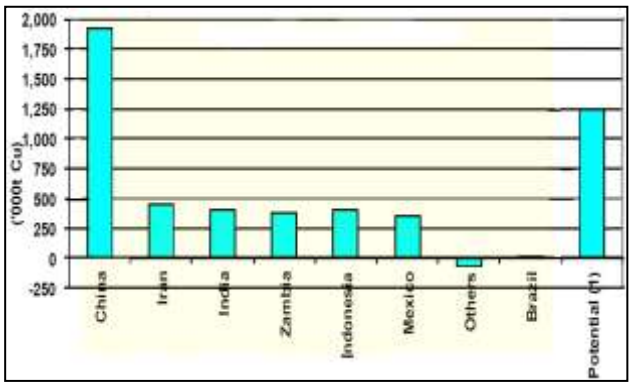


Source: ICSG

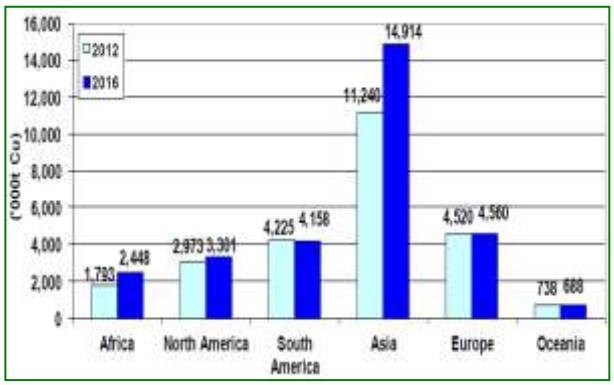
The projected trend in annual world copper mine production capacity reveals that the annual average world mine capacity growth until 2016 is expected to be around 8%. World mine production capacity expected to grow to 27.7 Mt of copper in 2016 and Concentrate production is expected to grow to 22Mt and SX-EW to 5.7 Mt.

South America will remain the region with the largest copper mine installed capacity and is expected to bring to the market until 2016 an additional 2.3 Mt capacity (31% of the world total growth). Asian and African copper mining capacity has also increasing substantially. All together, these three regions represent 78% of the world additional copper mine production capacity to come on stream by 2016.

The world's projected copper smelter production capacity increase by country is explained in the following graph. As per the details, Beyond 2016, future possible new/expanded smelters in Mongolia, Egypt, Saudi Arabia, Philippines, Indonesia and Tanzania.



Source: ICSG

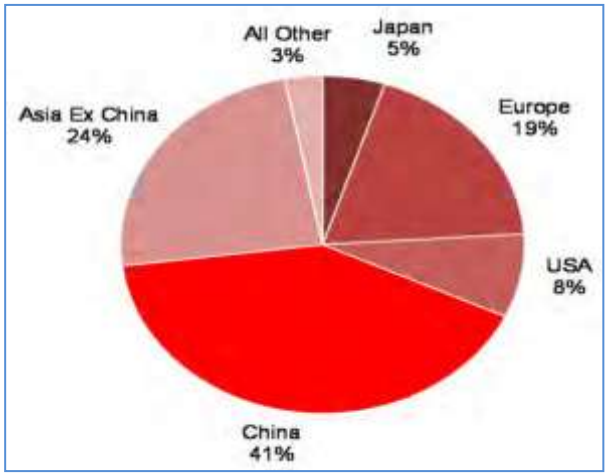


Source: ICSG

Meanwhile, Until 2016, world copper refinery capacity expected to grow by 4.6 Mt (18%) to 30 Mt. 3.6 Mt of the expansion expected to come from electrolytic refineries and almost 1 Mt from electrowinning capacity. The Supremacy of Asia continues over the other regions is likely to continue. Some growth in Africa and North America and the rest region is likely to remain practically unchanged.

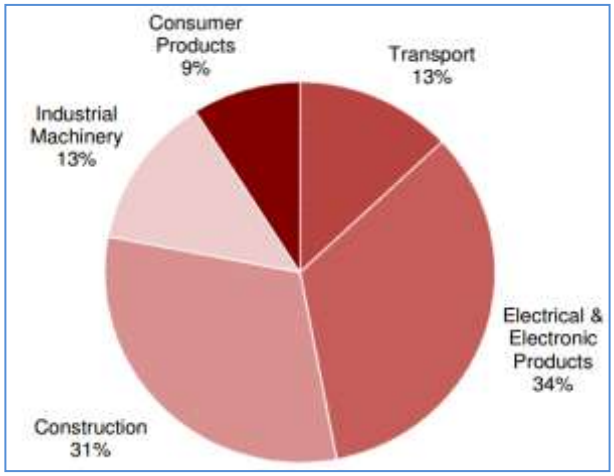
The pattern of consumption of copper is also region specific. Asia Contributes to above 70 per cent of the consumption and China alone consumes about 41 per cent of it. Refined copper usage (usage by semis plants or the first users of copper) in 2012 reached 20.5 MMT. China was also the largest consumer of refined copper in 2012 with apparent usage of over 8.8 MMT.

Copper Consumption by Region



Source: ICSG

Copper Consumption by End-use



Source: ICSG

India's status in Global Copper Trade

Exports

The export of copper from India is in the forms of copper ore & concentrates, refined copper, copper & alloys, brass & bronzes, scrap, cement copper, mattes and powder & flakes.

Export of copper ores and concentrates considerably increased to 30 tonnes in 2012-13 as against 20 tonnes in 2011-12. Exports were mainly to Italy (67%) and USA (20%). Export of refined copper increased slightly to 263,311 tonnes in 2012-13 from 238,138 tonnes in 2011-12. Export of copper and alloys (including brass & bronze) was at 332,329 tonnes in 2012-13 as against 334,913 tonnes in 2011-12. Out of the total exports of copper & alloys in 2012-13, which were 291,463 tonnes, brass & bronze constituted 34,938 tonnes, copper (scrap) 4992 tonnes and brass & bronze (scrap) were 903 tonnes. China was the single largest importer of refined copper from India with a share of 88%.

Export of Refined Copper (MT)

Country	2011-12	2012-13
China	226288	232311
Malaysia	-	27203
Vietnam	110	1809
Egypt	820	730
Colombia	-	660
Mexico	-	120
Japan	2100	100
Singapore	109	95
UAE	6392	79
Netherlands	123	53
Other countries	2196	150
All Countries	238138	263311

Export of Copper and Alloys (MT)

Country	2011-12	2012-13
China	226699	23286
Malaysia	7360	27419
UAE	18788	4240
USA	3339	3224
Saudi Arabia	3582	2820
Germany	2016	2217
Sri Lanka	3143	2066
Vietnam	181	1828
Egypt	1138	988
Thailand	1535	1696
Other countries	19707	12100
All Countries	287488	81884

Export of Brass and Bronze (Scrap) (MT)

Country	2011-12	2012-13
China	24	493
Malaysia	228	204
Hong Kong	166	165
Nepal	9	30
UAE	17	8
Singapore	++	2
Nigeria	-	1
USA	1	++
UK	-	++
Baharain	-	++
Other countries	180	++
All Countries	625	903

Export of Brass and Bronze (MT)

Country	2011-12	2012-13
UAE	3879	6254
USA	8815	8211
UK	3503	2219
Saudi Arabia	1953	1721
Germany	1734	1342
Australia	1274	1341
Morocco	442	643
Netherlands	1478	1096
France	568	514
Malaysia	1101	747
Other countries	14469	10850
All Countries	39216	34938

Export of Copper and Alloys (Including Brass and Bronze) (MT)

Country	2011-12	2012-13
China	230683	234016
Malaysia	8689	28370
UAE	22692	10503
USA	12156	11436
Germany	6126	6813
Saudi Arabia	5548	4541
UK	4761	2939
Sri Lanka	3692	2520
Vietnam	218	1849
Australia	1673	1624
Other countries	38675	27716
All Countries	334913	332327

Export of Copper (Scrap) (MT)

Country	2011-12	2012-13
Germany	2376	3254
Japan	376	593
Portugal	-	294
Korea,	485	219
Latvia	47	216
Philippines	275	175
Spain	242	103
Singapore	24	76
Taiwan	++	27
Netherlands	-	27
Other countries	3706	8
All Countries	7531	4992

Imports

The imports of copper in the country are in the form of copper ore and concentrates, refined copper, copper & alloys, brass & bronzes, scrap, cement, copper, mattes, blister, worked (bars, rods & plates), etc.

During the year 2012-13, imports of copper ores and concentrates were slightly higher at 2,296,421 tonnes as compared to 2,124,501 tonnes in 2011-12 Chile with a share of 47% was the leading supplier followed by Australia (20%), Indonesia (10%) and Brazil (6%). Imports of refined copper increased marginally in 2012-13 at 23,977 tonnes as against 18,524 tonnes in 2011-12. Zambia with 49% share was the major supplier followed by Chile (9%), Congo (8%) and Congo Dem Rep (6%). Out of total imports in 2012-13, copper & alloys comprised 184,656 tonnes, copper Scrap) 56,502 tonnes, copper alloys (scrap) were not imported during 2012-13, brass & bronze 19,406 tonnes and brass & bronze (scrap 147,753 tonnes.

Import of Copper Ores and Concentrates (MT)

Country	2011-12	2012-13
Chile	758603	1078486
Australia	510162	449283
Indonesia	322579	228735
Brazil	157986	143814
Peru	56176	77878
Lao Pd Rp	41464	60590
Canada	61027	41393
Austria	-	30433
Switzerland	-	33381
Thailand	54523	36944
Other countries	161981	115484
All Countries	2124501	2296421

Imports of Refined Copper (MT)

Country	2011-12	2012-13
Zambia	2498	11775
Chile	1421	2072
Congo P Rep	101	1918
Zaire Rep	201	1495
UAE	1025	1019
China	375	936
Belgium	151	546
Austria	686	345
Ukraine	2279	350
Unspecified	554	561
Other countries	9233	2960
All Countries	18524	23977

Imports of Copper and Alloys (MT)

Country	2011-12	2012-13
Zambia	15661	34855
Russia	27721	31766
China	24413	26083
UAE	21825	24691
Malaysia	13752	14015
Germany	7512	9610
Korea	6018	5218
Chile	1460	5071
Thailand	3737	4074
Italy	2163	2403
Other countries	47822	26870
All Countries	172084	184656

Imports of Copper (Scrap) (MT)

Country	2011-12	2012-13
UAE	14254	19469
Saudi Arabia	4300	8487
Germany	4199	2732
Kuwait	1437	2628
Malaysia	1963	2323
UK	3939	1742
France	2648	1424
USA	2768	1436
Lebanon	404	1182
Qatar	1073	898
Other countries	20881	14181
All Countries	57866	56502

Imports of Copper and Alloys (Including Brass and Bronze) (MT)

Country	2011-12	2012-13
UAE	48230	57039
Zambia	16866	34855
Russia	28205	32662
China	29736	31078
Germany	29754	22035
Malaysia	18066	20123
Pakistan	2105	26267
Finland	1570	29445
Saudi Arabia	12237	18479
UK	22727	17067
Other countries	140794	119267
All Countries	350290	408317

Imports of Brass and Bronze (MT)

Country	2011-12	2012-13
China	3181	3484
Germany	2419	2384
Japan	1798	2243
Malaysia	1352	2491
Nepal	1913	2229
Russia	208	811
Korea	325	680
Chinese	912	676
Italy	271	427
Thailand	511	830
Other countries	3381	3151
All Countries	16271	19406

Imports of Brass and Bronze (Scrap) (MT)

Country	2011-12	2012-13
Pakistan	714	25545
Finland	1417	29135
UK	17036	14642
UAE	11817	12558
Saudi Arabia	7775	9800
Germany	15624	7309
USA	6538	5868
Netherlands	2776	4020
Bangladesh	2776	3497
Spain	2619	2797
Other countries	34971	32582
All Countries	104063	147753

Imports of Copper and Alloys (Excluding Brass and Bronze and Scrap) (MT)

Item	2011-12	2012-13
Blister & other Unrefined Copper	13144	21813
Copper & Alloys: worked (Bars,Rods,Plates,etc)	39514	45974
Copper & Alloys: worked Nes	5982	7893
Copper & alloys:unwrought Excl.Brass & Bronze	1851	2027
Copper Mattes	20	++
Copper powder & flakes	700	652
Copper Refined: Copper worked	91326	77288
Electroplated Anode of Nickel	993	4965
Master Alloys of Copper	30	67
Refined Copper	18524	23977
All Items	172084	184656

Latest Development in Copper Market & Forecasts

- According to preliminary ICSG data, and excluding the adjustment for changes in China's bonded stocks, in October, the market returned to a production deficit of around 40,000 metric tonnes (t), mainly due to strong Chinese apparent usage. When making seasonal adjustments for world refined production and usage, October showed a production deficit of around 60,000 t.
- The refined copper balance for the first ten months of 2014, including revisions to data previously presented, indicates a production deficit of 616,000 t (a seasonally adjusted deficit of 532,000 t).
- This compares with a production deficit of 159,000 t (a seasonally adjusted deficit of 56,000 t) for the same period of 2013. In the first ten months of 2014, world usage is estimated to have increased by around 11 per cent ([1.9 Million tons (Mt)] compared with that in the same period of 2013, supported by strong demand in China and a shortage of high-grade scrap that led to the use of more cathode by semi-manufacturers.
- Chinese apparent demand increased by 18 per cent (+1.4 Mt) based on an 18 per cent increase in net imports of refined copper. Excluding China, world usage increased by 5 per cent, supported mainly by apparent usage growth of 11 per cent in the European Union and 10 per cent in Japan, as well as by growth of 6.5 per cent in other Asian countries (excluding China and Japan) and 10 per cent in the Middle East/North Africa region. Usage in the United States remained flat.
- World mine production is estimated to have increased by around 2 per cent (295 Mt) in the first ten months of 2014 compared with mine production in the same period of 2013. Concentrate production increased by 2 per cent (205,000 t) while solvent extraction-electrowinning increased by 3 per cent (90,000 t).
- Most of the major copper-mine producing countries had greater output, with the exception of Chile, where production remained essentially unchanged; Indonesia (-23 per cent), where production remained constrained by the ban on concentrates exports until August; Zambia (-6 per cent), where output was reduced by an operational failure at the Lumwana mine and lower production levels at other producers; and Australia (-3 per cent) where two mines closed temporarily. Production increased by 2 per cent in Peru, 9 per cent in the United States (where production in the first half 2013 had been impacted by the landslide at the Bingham Canyon Mine), 12 per cent in the Democratic Republic of Congo (DRC), 7 per cent in Mexico, 12 per cent in Canada and 36 per cent in Mongolia.
- The average world mine capacity utilization rate for the first ten months of 2014 fell to 84 per cent from 86 per cent in the same period of 2013 as the growth in capacity outstripped the increase in production. World refined production is estimated to have increased by around 8 per cent (1.5 Mt) in

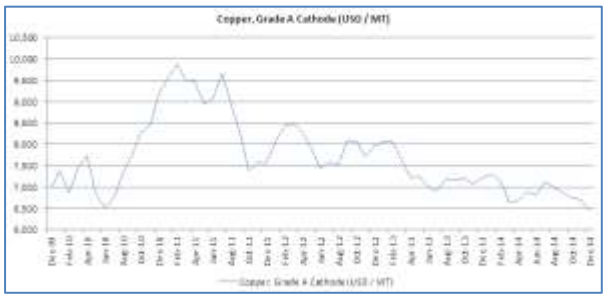
the first ten months of 2014 compared with refined production in the same period of 2013: primary production increased by 8 per cent (including 9 per cent growth in production from concentrates), and secondary production (from scrap) increased by 11 per cent. The main contributor to growth was China (19 per cent, 1 Mt), followed by India, the DRC, the United States and Japan, where aggregated production increased by 14 per cent (430,000 t). Output in Chile, the second leading world refined copper producer, declined by 1 per cent owing to a 5 per cent decline in electrowon production.

- On a regional basis, refined production is estimated to have increased in Africa (8 per cent), North America (9 per cent), Asia (13 per cent), Europe (3 per cent), and Oceania (12 per cent) and to have declined in South America (-1 per cent). The average world refinery capacity utilization rate for the first ten months of 2014 increased to 83 per cent from 79 per cent in the same period of 2013.
- Based on existing facilities and announced project developments, annual copper mine production capacity until 2018 is expected to grow at an average rate of around 6 per cent per year (per cent/yr) to reach 27.6 million metric tonnes per year (Mt/yr) in 2018, an increase of around 5.8 Mt (27 per cent) from that in 2014. Concentrates production capacity will represent 83 per cent of the growth (4.8 Mt) and SX-EW capacity 17 per cent (1 Mt).
- Compared with the previous Directory (July 2014), anticipated mine production capacity for 2016 and 2017 has been revised downwards by around 970,000 metric tonnes per year (t/yr) and 1.2 Mt, respectively owing to delay in projects.
- During the four-year period, copper in concentrate capacity is expected to increase by 6.5 per cent/yr to reach 21.8 Mt/yr in 2018, and solvent extraction-electrowinning (SX-EW) capacity is expected to increase at a slower rate of 4.8 per cent/yr to reach 5.8 Mt/yr in 2018. Peru is projected to account for 27 per cent of the additional capacity from new mine projects and expansions through 2018, followed by Zambia, Mexico, Mongolia, China and the Democratic Republic of the Congo (DRC). Together these six countries will represent 60 per cent of the world growth.
- Annual copper smelter capacity growth is projected to lag behind the growth in concentrate capacity, growing by an average of 3 per cent/yr to reach 22.5 Mt/yr in 2018, an increase of 2.6 Mt (13 per cent) from that in 2014. China is continuing to expand its smelting capacity and will account for 60 per cent of the expected world growth through 2018.
- The ICSG tabulations indicate that world copper refinery capacity will reach 30.3 Mt/yr in 2018, an increase of 3 Mt/yr (11 per cent) from that in 2014. About 2 Mt/yr of the expansion is expected to come from electrolytic refineries and around 1 Mt/yr from electrowinning capacity. Electrolytic refinery capacity growth is projected to average 2.6 per cent/yr and is generally tied to the growth of smelter capacity. About 38 per cent (1.1 Mt/yr) of the world refinery capacity increase during this period is expected to come from electrolytic refineries in China and about 26 per cent (780,000 t/yr) from electrowinning capacity increases in DRC, Mexico, Peru and Zambia.
- China runs a structural copper deficit, with refined consumption of around 8.8 million MT and refined production of around 5.6 million MT; it seems unlikely that much of the Chinese stockpile will leave the country. Asia is accounting for 87 per cent of the increase in capacity – the China, India, Indonesia and Iran totals with all increase.
- Copper consumption estimates for China are being revised up. Huge spending on copper-intensive power infrastructure on the state grid in 'rural areas' will continue through 2014 (12 bn RMB). Beijing has also renewed the 'home appliance subsidy scheme' and is promoting electric cars, which are twice as copper-intensive as conventional vehicles. Overall urban population increases (by 2025, one billion people are projected to live in urban areas) and 221 Chinese cities will have over 1 million people (Europe has 35 cities with over 1 million people). Along with those massive increases, increased demand will be seen for buildings (5 million projected to be constructed by 2025) and transit (170

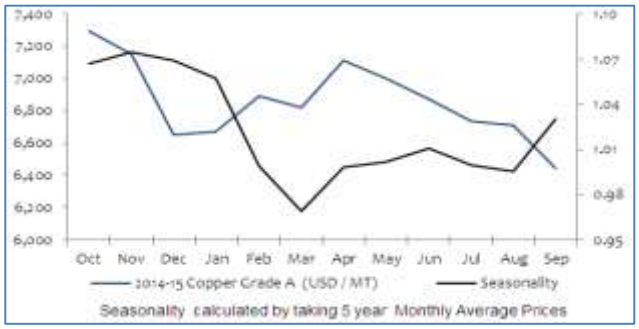
mass transit systems projected to be built- Europe has 70). Ultimately, whether it is more people, more buildings, or more infrastructures, more copper will be needed to facilitate construction.

Price Trend Analysis

In late 2012 and early 2013, optimism was running high that the US economic recovery would continue and that China would move into recovery mode too. On the strength of that, metal prices ran higher while investment interest picked up. Although US data has tended to remain upbeat, Chinese data has been less constructive and a recovery in demand during the first quarter has proved to be fairly elusive. This forced a reappraisal of the outlook for commodity demand and a corresponding correction in prices. The market was in a deficit of 3,40,000 MT in 2012, according to preliminary data from the International Copper Study Group (ICSG), but it had swung into a surplus in October and remained in one for the whole of the fourth quarter – totaling 2,37,000 MT.



How 2013 turns out is likely to be determined by the extent to which consumers feel the need to restock. Manufacturing PMIs have become quite mixed – the US ISM number climbed to 54.2 in February from 53.1 in January and 50.7 in December but then dropped to 51.3 in March, which suggest the US recovery is still stop/start. Copper has had some of the tightest fundamentals of all the metals in recent years, which is no doubt why prices have managed to hold so far above the marginal cost of production. On paper, the market looks set to move into a supply surplus in 2013, which should in theory put downward pressure on prices; indeed, that seems to have been unfolding in recent months. This trend in the copper market has continued for the most of 2014 too, keeping the copper prices under tremendous pressure. However, the long-term investment potential is huge considering the projected demand scenario.



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