



New Edition of ‘Directory of Copper Mines and Plants’

The International Copper Study Group (ICSG) released a new Edition of its biannual Directory of Copper Mines and Plants that **provides global facility-by-facility production capacity and summary country capacity through 2019, and also presents the main projects expected to be developed in the next decade.** The Directory, which incorporates the latest updates to capacity and ownership for about 1,200 individual facilities, also includes charts/tables on the current and long-term global distribution of capacity by country, size, operational/development status and process type. The biannual Directory is available for sale to ICSG member country/non-member country clients at the single issue rate of €400/€600 and annual subscription rate of €500/€750. At an additional cost of €200/€250 capacity data for copper mines, smelters and refineries may be accessed through the ICSG interactive online statistical database allowing users to easily extract data suited to their analysis requirements. Please see the attached Directory table of contents or contact ICSG for additional information or purchasing details (mail@icsg.org).

Based on existing facilities and announced project developments, and including revisions to data presented in the previous Directory, annual copper mine production capacity until 2019 is expected to grow at an average rate of around 4% per year (%/yr) to reach 26.5 million metric tonnes per year (Mt/yr) in 2019, an increase of around 3.9 Mt (17%) from that in 2015. Concentrates production capacity will represent 83% of the growth (3.2 Mt) and SX-EW capacity 17% (670,000 metric tonnes [t]). Compared with the December 2015 Directory, anticipated annual mine production capacity for 2018 and 2019 has been revised downwards by around 200,000 t and 500,000 t respectively, owing mainly to continued delays for many projects (expansions/start-up). However readers should be aware that downwards capacity revisions are due not only to delays in project development but also to new information not previously available.

During the four-year period, copper in concentrate capacity is expected to increase by around 4%/yr to reach 21 Mt/yr in 2019, and solvent extraction-electrowinning (SX-EW) capacity is expected to increase at a slower rate of 3%/yr to reach 5.5 Mt/yr in 2019. Peru is projected to account for 25% of the additional capacity from new mine projects and expansions through 2019, followed by Zambia, the Democratic Republic of the Congo (DRC), China and Mexico. Together these five countries will represent 65% of the world growth. Projects are also being planned in countries that currently do not mine copper, including Afghanistan, Ecuador, Ethiopia, Fiji, Greece, Israel, Panama, Sudan and Thailand. By 2019, total expected copper production capacity from projects starting in these new copper mining countries could reach 330,000 t/yr, and capacity could continue to increase well above 1 Mt/yr if projects under evaluation in these countries are developed. Concurrently, production from countries that started mining copper in the last decade is seen as increasing from zero in 2000 to around 400,000 t/yr this year. The Directory also highlights increased interest in seabed copper exploration with some projects being evaluated, the first one of which is expected to start in 2018 in the Bismarck Sea, off Papua New Guinea.

Annual copper smelter capacity growth is projected to lag behind the growth in concentrate capacity, growing by an average of almost 3%/yr to reach 22.8 Mt/yr in 2019, an increase of 2.4 Mt (12%) from that in 2015. Although at a slower pace, China is continuing to expand its smelting capacity and will account for 65% of the expected world growth through 2019. China’s copper smelting capacity quintupled in the period 2000-2015 increasing by around 4.7 Mt/yr and is expected to increase by a further 1.5 Mt/yr by 2019. Outside of China, a new copper smelter started last year in Zambia and others are expected to be built in India, Indonesia, Iran, Kazakhstan, Mexico and Mongolia. The balance between concentrate production and available smelting capacity will depend on capacity utilization rates.

The ICSG tabulations indicate that world copper refinery capacity will reach 29.7 Mt/yr in 2019, an increase of 2.4 Mt/yr (9%) from that in 2015. About 1.7 Mt/yr of the expansion is expected to come from electrolytic refineries and around 700,000 t/yr from electrowinning capacity. Electrolytic refinery capacity growth is projected to average 2%/yr and is generally tied to the growth of smelter capacity. About 50% (1.2 Mt/yr) of the world refinery capacity increase during this period is expected to come from electrolytic refineries in China and about 25% (600,000 t/yr) from electrowinning capacity increases in DRC, Mexico, Myanmar and Zambia.

Projected World Copper Production Capacities until 2019

('000t Cu)	2015	2016	2017	2018	2019	accumulated growth %	Avg annual growth %
SX-EW	4,820	4,946	5,333	5,425	5,486	13.8%	3.3%
Concentrates	17,751	18,578	19,611	20,191	20,995	18.3%	4.3%
Total Mines	22,571	23,524	24,944	25,616	26,481	17.3%	4.1%
Total Smelters	20,366	21,186	22,026	22,416	22,776	11.8%	2.8%
Electrolytic Refineries	21,726	22,231	22,961	23,171	23,471	8.0%	2.0%
Total Refineries	27,291	27,922	29,039	29,341	29,702	8.8%	2.1%
Year on Year Growth (tonnage)		2016	2017	2018	2019	accumulated	
SX-EW		126	387	92	61	666	
Concentrates		827	1,033	581	804	3,245	
Total Mines		953	1,420	672	865	3,910	
Total Smelters		820	840	390	360	2,410	
Electrolytic Refineries		505	730	210	300	1,745	
Total Refineries		631	1,117	302	361	2,411	

Background notes:

The biannual ICSG Directory of Mines and Plants provides basic data for all copper mining, smelting and refining operations on a world-wide basis and projects the development of future capacities for these operations. These projections can serve as a basis for forecasts of the supply side development for copper. Each edition is complemented by a list of web addresses of companies, enabling quick and easy access to more company details. The ICSG database is continually updated to reflect recent announcements and operational changes. Salient details for each operation are included and the Directory separates operations between ‘Operating’, ‘Developing’ and ‘Planned (Exploration and Feasibility)’ stages.