



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, annual copper mine production capacity until 2019 is expected to grow at an average rate of around 5% per year (%/yr) to reach 27 million metric tonnes per year (Mt/yr) in 2019, an increase of around 4.4 Mt (20%) from that in 2015. Concentrates production capacity will represent 84% of the growth (3.7 Mt) and SX-EW capacity 16% (710,000 metric tonnes [t]). Compared with the June 2015 Directory, anticipated annual mine production capacity for 2017 and 2018 has been revised downwards by around 1.1 Mt and 1.6 Mt, 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 4.8%/yr to reach 21.5 Mt/yr in 2019, and solvent extraction-electrowinning (SX-EW) capacity is expected to increase at a slower rate of 3.5%/yr to reach 5.5 Mt/yr in 2019. Peru is projected to account for 27% of the additional capacity from new mine projects and expansions through 2019, followed by Zambia, China, Mexico, and the Democratic Republic of the Congo (DRC). Together these five countries will represent 60% 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 2018, total expected copper production capacity from projects starting in these new copper mining countries could reach 300,000 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 3%/yr to reach 23 Mt/yr in 2019, an increase of 2.6 Mt (13%) from that in 2015. Although at a slower pace, China is continuing to expand its smelting capacity and will account for 57% 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 Indonesia, Iran, Kazakhstan and Mexico. 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 2.2%/yr and is generally tied to the growth of smelter capacity. About 46% (1.1 Mt/yr) of the world refinery capacity increase during this period is expected to come from electrolytic refineries in China and about 21% (500,000 t/yr) from electrowinning capacity increases in DRC, Mexico, Peru and Zambia.

Projected World Copper Production Capacities until 2019

('000t Cu)	2015	2016	2017	2018	2019	accumulated growth %	Avg annual growth %
SX-EW	4,812	4,873	5,205	5,345	5,522	14.8%	3.5%
Concentrates	17,783	18,675	19,586	20,471	21,488	20.8%	4.8%
Total Mines	22,594	23,547	24,790	25,816	27,010	19.5%	4.6%
Total Smelters	20,366	21,171	21,986	22,406	22,916	12.5%	3.0%
Electrolytic Refineries	21,726	22,221	22,931	23,121	23,441	7.9%	1.9%
Total Refineries	27,263	27,839	28,881	29,211	29,708	9.0%	2.2%
Year on Year Growth (tonnage)		2016	2017	2018	2019	accumulated	
SX-EW		61	332	141	177	711	
Concentrates		892	911	886	1,017	3,706	
Total Mines		953	1,243	1,026	1,194	4,416	
Total Smelters		805	815	420	510	2,550	
Electrolytic Refineries		495	710	190	320	1,715	
Total Refineries		576	1,042	331	497	2,446	

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.

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