



## New Edition of ‘ICSG 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 2023, and presents the main projects and expansions expected to be developed in the next decade.** The Directory, which incorporates the latest updates to capacity, project development and ownership for more than 2,000 individual copper mines, smelters and refineries, also includes charts/tables on the current

and long-term global distribution of capacity by country, size, operational/development status and process type.

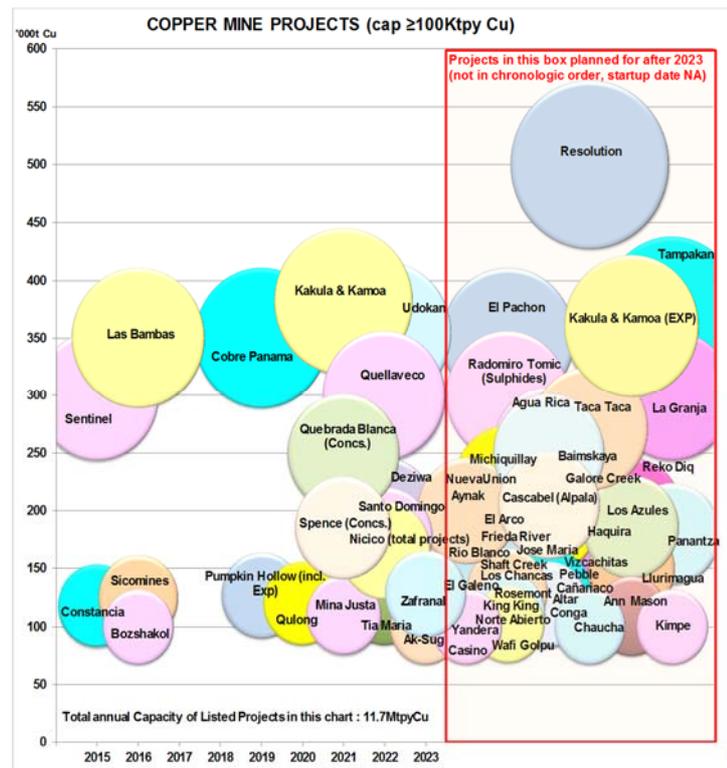
The biannual Directory is available for sale to ICSG member country/non-member country clients at the single issue rate of €400/€600 and annual subscription rate of €500/€750. At an additional cost of €200/€250 capacity data for copper mines, smelters and refineries may be accessed through the ICSG online statistical database allowing users to 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).

Trends in copper mine, smelter and refinery production capacity reflects production capability and not necessarily production forecasts. In the last 5 years, for instance, global mines have operated at an average of 85% of the capacity reported in the ICSG Directory due to several factors that constrained actual production such as strikes, accidents, adverse weather, etc

In addition to the thorough research undertaken by the ICSG secretariat, updated and detailed information regarding capacity trends at operating/projected mines/plants is received from ICSG member countries. The current Directory highlights the following trends:

• **Through 2023 annual copper mine capacity is likely to grow at an average rate of 3.7% per year:**

- Lower growth of about 1.5%/year seen in 2019/2020 as compared to growth of around 5%/year expected in 2021/2023 when more projects/expansions are planned to come on stream.
- 85% of world capacity growth through 2023 will occur in the period 2021/2023. The postponement of projects in the last few years due to unfavourable trends in capital expenditure and delays in project development mainly as a result of the time required for project permitting shifted new capacity forward with fewer projects starting in 2019/2020.
- Concentrates represent around 90% of the total growth in world mine capacity until 2023.
- 38% of world capacity growth through 2023 is expected to come from ramp-ups and expansions of currently operating mines, 48% from mines currently under development and 14% from projects currently under feasibility.
- Interest in seabed copper exploration is increasing with a number of projects currently being evaluated. These are listed in the Directory.
- Capacity development linked to Chinese overseas investments mainly in Africa and South America continues to rise.
- Beyond 2023, there is no shortage of new capacity with a significant number of copper mine projects currently being evaluated (see chart on the right and detailed information in the Directory)



• **Through 2023 annual copper smelter capacity is expected to grow at an average rate of around 3.5% per year**

- China is continuing to expand its copper smelting capacity but at a slower pace than before. Chinese capacity more than quintupled in the period 2000-2017 and is expected to increase by a further 40% by 2023, accounting for 75% of expected world copper smelting capacity growth through 2023.
- The proportion of smelters using Chinese technology has increased from 2% to around 10% in the last 10 years.
- Outside China and through 2023, new copper smelters are planned in Chile, the DRC, India, Indonesia, Iran and Mongolia and expansions in Finland, Iran, Poland, Russia and Sweden. Other projects are planned beyond 2023 but are still pending approval.

• **Through 2023 annual copper refinery capacity is likely to grow at an average rate of around 2.5% per year**

- Growth in electrolytic refinery capacity, generally tied to the growth of smelter capacity, is projected to average 2.7%/yr. Growth in Electrowinning (SX-EW) capacity is projected at 2%.
- About 85% of the growth in global refined capacity through 2023 is expected to come from electrolytic refineries.
- China (in the form of electrolytic capacity) will be by far the biggest contributor to world growth in refined capacity followed by the DRC and Peru (in the form of electrowinning capacity).
- Electrowinning capacity is expected to decline by 10% in Chile through 2023.

**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/ownership changes. Salient details for each mine, smelter and refinery are included and the Directory separates operations between ‘Operating’, ‘Developing’, ‘Exploration’ and ‘Feasibility’ stages.** It also includes information on the mines/smelters/refineries production processes, concentrate grades and by-products.

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