



## 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 2021, 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 1,000 individual facilities, also includes charts/tables on the current and long-term

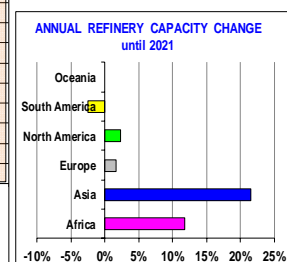
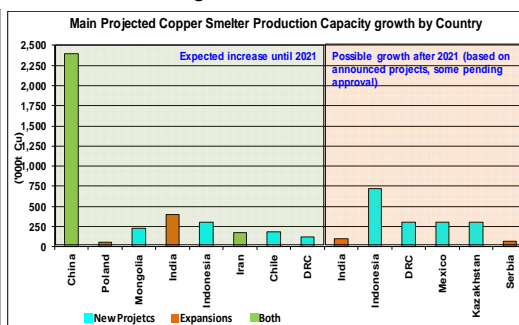
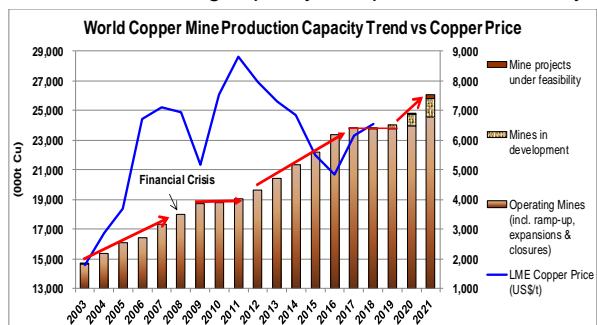
global distribution of capacity by country, size, operational/development status and process type.

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).

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 and projected mines/plants is received from ICSG member countries. The current Directory highlights the following trends:

- **Through 2021 annual copper mine capacity is likely to grow at an average rate of 2.2% per year:**
  - Lower growth of about 0.5% seen in 2018/2019 as compared to growth of 4% expected in 2020/2021 when more projects/expansions are expected to come on stream.
  - Concentrates represent around 85% of the total growth in world mine capacity until 2021
  - 31% of world capacity growth through 2021 is expected to come from ramp-up and expansions of currently operating mines, 56% from mines currently under development and 13% from projects currently under feasibility.
  - 90% of world growth through 2021 will occur in the years 2020/2021. Continued delays in project development are shifting new capacity forward mainly as a result of length in project permitting, opposition from local communities and budget/financial constraints. However, recently there has been a favourable trend in capital expenditure and project approval.
  - There is increased interest in seabed copper exploration with projects being evaluated, the first of which is expected to start producing copper before then end of the decade. The Directory gives an overview of announced seabed copper projects.
  - Continued increase in capacity development linked to Chinese overseas investments mainly in Africa and South America.
- **Through 2021 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 3% by 2021, accounting for 68% of expected world smelting capacity growth over the period 2018-2021.
  - Chinese smelting technology has increased its global share from less than 1% to around 9% in the last 10 years.
  - Outside of China and through 2021, new copper smelters are planned in Chile, the DRC, Indonesia and Mongolia and expansions in India, Iran and Poland. Other projects are planned beyond 2021 but still pending approval.
  - In Chile, operating smelters have undergone modernisation in order to comply with the new emissions standards that became effective in December 2018.
- **Through 2021 annual copper refinery capacity should grow at an average rate of around 3% per year**
  - Growth in electrolytic refinery capacity, generally tied to the growth of smelter capacity, is projected to average 3.2%/yr. Growth in Electrowinning (SX-EW) capacity is projected at 1.7%.
  - About 90% of the growth in global refined capacity through 2021 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 India and the DRC (in the form of electrowinning capacity).
  - Electrowinning capacity is expected to decline by 10% in Chile through 2021.



### 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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