



## New Edition of 'ICSG Directory of Copper Mines and Plants'

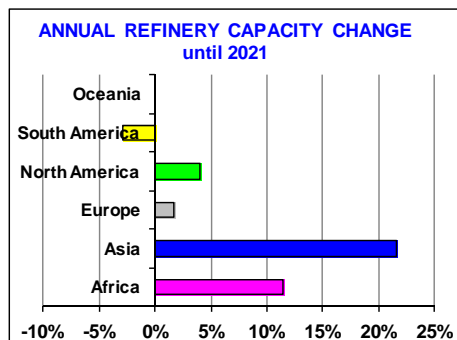
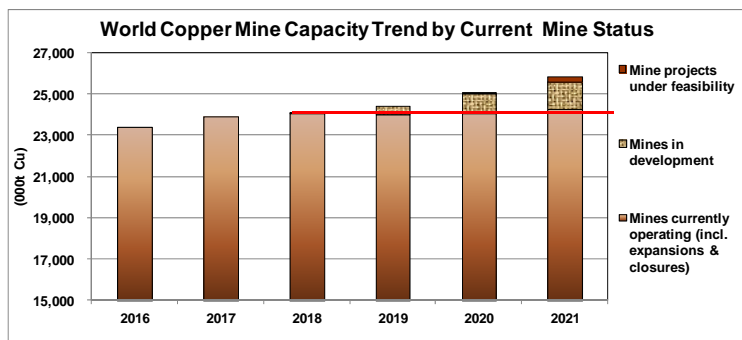
The International Copper Study Group (ICSG) released a new Edition of its biannual Directory of Copper Mines and Plants that **provides global facility-by-facility production capacity and summary country capacity through 2021, and also presents the main projects expected to be developed in the next decade.** 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).

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 and refineries have operated at an average of 85% of the capacity reported in ICSG Directory due to several factors that constrained actual production levels such as strikes, accidents, adverse weather, etc

Besides thorough research undertaken by 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:

- **Through 2021 annual copper mine capacity is likely to grow at an average rate of around 2% per year (%/yr):**
  - Lower growth of about 1% is expected in 2018/2019 as compared to a growth of 3% expected in 2020/2021 when more projects/expansions are planned to come on stream
  - Concentrates will represent around 80% of the total growth in world mine capacity until 2021
  - Global capacity from current operating mines is expected to remain essentially unchanged in the period 2018-2021 as growth originating through expansions will be offset by planned closures and lower ore grades
  - Continued delays in project development are shifting new capacity forward owing mainly to length of project permitting, opposition from local communities and budget/finance 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 concentrates next year in the Bismarck Sea, off Papua New Guinea
  - Continued increase in capacity development linked to Chinese overseas investments
  - Through 2021 China, the Democratic Republic of the Congo (DRC), Iran, Panama, Peru, the United States and Zambia are expected to be the biggest contributors to the growth in world copper mine capacity
- **Through 2021 annual copper smelter capacity is likely to grow at an average rate of around 3.5% per year (%/yr)**
  - China is continuing to expand its smelting capacity but at a slower pace than before. China's copper smelting capacity more than quintupled in the period 2000-2017 and is expected to increase by a further 30% by 2021, accounting for 70% of the expected world growth in smelting capacity 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 Indonesia and Mongolia and expansions in India, Iran and Poland. Other projects are planned beyond 2021 but not yet approved.
  - In Chile, operating smelters are undergoing modernisation processes to comply with the new emissions standards that become effective at the end of this year and a new smelter is expected to be built.
- **Through 2021 annual copper refinery capacity might grow at an average rate of around 3% per year (%/yr)**
  - About 90% of the growth in global refined capacity through 2021 is expected to come from electrolytic refineries.
  - Electrolytic refinery capacity growth is projected to average 3.2%/yr and is generally tied to the growth of smelter capacity.
  - 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 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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