

THE WORLD COPPER FACTBOOK 2026



INTERNATIONAL COPPER STUDY GROUP

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CITATION: Please cite this work as: International Copper Study Group. (2026). *The World Copper Factbook 2026*. Lisbon, Portugal.

ACKNOWLEDGEMENTS: ICSG would like to thank the International Wrought Copper Council (IWCC), International Copper Association (ICA), Copper Development Association (CDA), European Copper Institute (ECI), U.S. Geological Survey (USGS), International Energy Agency (IEA), and the British Museum for their contributions to the Factbook.

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Membership is extended to any United Nations member country actively engaged in copper production, utilisation, or international trade. Countries seeking further details on membership with the International Copper Study Group are encouraged to contact the Secretary General of the International Copper Study Group.

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THE INTERNATIONAL COPPER STUDY GROUP (ICSG)

The International Copper Study Group (ICSG) was formally established as an autonomous intergovernmental organisation on 23 January 1992, following a series of Ad Hoc meetings sponsored by the United Nations (UNCTAD) in 1986 and 1987 to review the world situation of copper and discuss the need for such a body.

ICSG's mandate is to enhance copper market transparency and promote international cooperation and discussions on issues related to copper.

To fulfil its mandate, the Study Group has three main objectives:

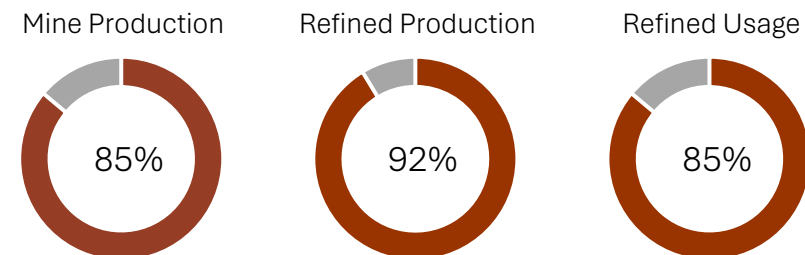
1. **Increase transparency in the global copper market:** The ICSG collects, analyses and publishes comprehensive data on copper production, consumption, trade, stocks, and prices. Additionally, it assesses the current and future capabilities of copper mines, smelters, refineries, and semi-manufacturing plants worldwide. It also develops forecasts of global copper supply and demand.
2. **Promote international cooperation on copper-related issues:** The Group encourages cooperation among member countries on economic, technical, environmental and regulatory matters affecting the copper industry. Its work covers areas such as recycling, sustainability, technology, international trade and environmental issues.

3. **Provide a global forum for government–industry dialogue:** The ICSG serves as an international forum where governments, copper producers, consumers and other industry representatives can exchange information and discuss issues of common interest. The ICSG is the only inter-government forum solely dedicated to copper.

To provide a global forum for dialogue, ICSG meetings are held twice per year, typically in the Spring and Fall at ICSG Headquarters in Lisbon, Portugal. The Study Group meetings are open to government members, their industry advisors, and invited observers.

Currently, ICSG member countries account for the large majority of world copper activity, representing 85% of world mine production, 92% of refined copper production and 85% of refined copper usage, providing the Group with broad representation across the copper value chain.

ICSG MEMBERS' SHARE OF WORLD COPPER MARKET



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1. COPPER BASICS

WHAT IS COPPER?

Copper is a malleable and ductile metallic element that is an excellent conductor of heat and electricity, as well as being corrosion-resistant and antimicrobial. Copper occurs naturally in the Earth's crust in a variety of forms. It can be found in sulphide deposits (as chalcopyrite, bornite, chalcocite, and covellite), in carbonate deposits (as azurite and malachite), in silicate deposits (as chrysocolla and diopside), and as pure "native" copper.

Copper also occurs naturally in humans, animals, and plants. Organic life forms have evolved in an environment containing copper. As a nutrient and essential element, copper is vital to maintaining health. Life-sustaining functions depend on copper.

Copper and copper-based alloys are used in a variety of applications that are necessary for a reasonable standard of living. Its continued production and use are essential for society's development. How society exploits and uses its resources, while ensuring that tomorrow's needs are not compromised, is an important factor in ensuring society's sustainable development.

Copper is one of the most recycled of all metals. It is our ability to recycle metals over and over again that makes them a material of choice. Recycled copper (also known as secondary copper) cannot be distinguished from primary copper (copper originating from ores) once reprocessed. Recycling copper extends the efficiency of the use of the metal, results in energy savings, and contributes to

ensuring that we have a sustainable source of metal for future generations.

The demand for copper will continue to be met by the discovery of new deposits, technological improvements, efficient design, and by taking advantage of the renewable nature of copper through reuse and recycling. Also, competition between materials and supply and demand principles contribute to ensuring that materials are used efficiently and effectively.

Copper is an important contributor to the national economies of mature, newly developed, and developing countries. Mining, processing, recycling, and the transformation of metal into a multitude of products create jobs and generate wealth. These activities contribute to building and maintaining a country's infrastructure and create trade and investment opportunities. Copper will continue to contribute to society's development well into the future.



Figure 1. Native copper specimen. Source: Million Years Crystal, 2026.

COPPER PROPERTIES AND BENEFITS

Chemical Symbol	Cu
Atomic Number	29
Atomic Weight	63.54
Density	8960 kg/m ³
Melting point	1356 K
Specific Heat cp (at 293 K)	0.383 J/g.K
Thermal conductivity	394 W/m.K
Coefficient of linear expansion	$16.5 \times 10^{-6} / \text{K}$
Young's Modulus of Elasticity	110 GPa
Electrical Resistivity (at 20°C)	$1.68 \times 10^{-8} \Omega \cdot \text{m}$
Electrical Conductivity (at 20°C)	59.5 MS/m
Crystal Structure	Face-Centered Cubic

Copper makes vital contributions to sustaining and improving society. Copper's chemical, physical, and aesthetic properties make it a material of choice in a wide range of domestic, industrial, and high-technology applications.



Figure 2. Electrical conductor made of copper wire used in the transmission and distribution of electrical power.

Alloyed with other metals, such as zinc (to form brass), aluminium or tin (to form bronzes), or nickel, for example, it can acquire new characteristics for use in highly specialised applications. In fact, society's infrastructure is based, in part, on copper.

Copper combines several important physical and mechanical characteristics. It is an excellent conductor of electricity and heat, making it ideal for electrical and thermal applications. It also offers good corrosion resistance, contributing to a long service life in many environments. Copper is highly formable and relatively easy to machine, allowing it to be manufactured into a wide range of components. Its excellent malleability and ductility enable it to be rolled into thin sheets, bent into complex shapes, and drawn into fine wires without cracking or breaking.

But copper's benefits extend beyond mechanical characteristics:

- **Essential to health:** Copper is essential to the health of plants, animals, and humans. Deficiencies, as well as excesses, can be detrimental.
- **Antimicrobial Properties:** Due to copper's antimicrobial properties, copper and copper alloy products can be used to eliminate pathogens and reduce the spread of diseases.
- **Recycling:** Copper is one of the most recycled of all metals. Virtually all products made from copper can be recycled, and recycled copper loses none of its chemical or physical properties.
- **Energy Efficiency:** Copper can improve the efficiency of energy production and distribution systems.

SELECTED COPPER DEFINITIONS

- **Anode:** In copper electrorefining, the positive electrode made of impure copper, typically about 99–99.5% Cu, from which copper dissolves into the electrolyte for subsequent deposition at the cathode.
- **Blister Copper:** An intermediate copper product, typically containing about 98.5–99.5% Cu, produced by a converting furnace from copper matte. It is further processed by fire refining and, where required, electrorefining.
- **Cathode:** High-purity copper deposited at the negative electrode during electrorefining or electrowinning, typically containing about 99.99% Cu.
- **Contained Copper:** The analytically determined quantity of copper contained in products such as concentrates and precipitates.
- **Copper Concentrate:** A copper-rich product, usually produced by flotation of sulphide ores. It commonly contains about 20–40% Cu and is further processed to recover copper.
- **Copper Ore:** Naturally occurring rock or mineralised material containing copper minerals at concentrations that may allow economic extraction and processing.
- **Copper Scrap:** Copper-bearing material recovered from manufacturing processes or discarded products and recycled through remelting or refining.
- **Direct-Melt Scrap:** Clean, high-grade copper scrap that can be remelted directly for metal or alloy production without first undergoing smelting and electrolytic refining.
- **Electrorefining:** An electrolytic purification process in which impure copper dissolves from the anode and high-purity copper is deposited on the cathode.
- **Electrowinning (EW):** An electrolytic recovery process in which dissolved copper in a copper-rich solution is deposited as high-purity copper at the cathode.
- **Fire Refining:** A high-temperature refining process used to remove impurities from blister or secondary copper before casting or electrorefining.
- **Leaching:** A hydrometallurgical process in which copper is dissolved from ore or other copper-bearing material into an aqueous solution for subsequent recovery.
- **Matte:** A copper- and iron-sulphide intermediate produced during the smelting of copper concentrates and subsequently converted into blister copper.
- **Primary Copper:** Copper produced from mined ores rather than recycled or secondary materials.
- **Refined Copper:** Copper that has undergone refining to achieve the purity required for industrial use, principally produced as cathode or fire-refined copper.
- **Secondary Copper:** Copper recovered from scrap, residues, and other recycled copper-bearing materials.
- **Smelting:** A high-temperature process used to treat copper sulphide concentrates, separating unwanted materials and producing copper-rich matte.
- **Solvent Extraction (SX):** A hydrometallurgical process that selectively extracts copper from a leach solution and transfers it to a purified solution, typically for electrowinning.
- **Stocks:** Inventories of refined copper held by exchanges, producers, consumers, governments, and qualifying merchants; semi-fabricated products are excluded.
- **Refined Copper Usage:** The quantity of refined copper consumed in the production of copper semi-manufactures. Apparent usage may be calculated as production + imports – exports + beginning stocks – ending stocks.

COPPER IN HISTORY

Archaeological evidence demonstrates that copper was one of the first metals used by humans and was used at least 10,000 years ago for items such as ornaments and small objects in Western Asia. During the prehistoric **Chalcolithic Period** (derived from chalkos, the Greek word for copper), man discovered how to extract and use copper to produce ornaments and implements. As early as the 4th to 3rd millennium BC, workers extracted copper from Spain's Huelva region.

The discovery that copper, when alloyed with tin, produces bronze led to the **Bronze Age**, c. 2,500 BC. Israel's Timna Valley provided copper to the Pharaohs (an Egyptian papyrus records the use of copper to treat infections and to sterilise water). Cyprus supplied much of the Phoenician, Greek, and Roman needs for copper. "Copper" is derived from the Latin *Cyprium*, literally Cyprian metal. The Greeks of Aristotle's era were familiar with brass as a valued copper alloy. In South America, the pre-Columbian Maya, Aztec and Inca civilisations exploited copper, in addition to gold and silver. During the **Middle Ages**, copper and bronze works flourished in China, India and Japan.

The discoveries and inventions relating to electricity and magnetism in the late 18th and early 19th centuries by scientists such as Ampere, Faraday and Ohm, and the products manufactured from copper, helped launch the **Industrial Revolution** and propel copper into a new era. **Today**, copper continues to serve society's needs. Although copper has been in use for at least 10,000 years, innovative applications for copper are still being developed, as evidenced by the development of the copper chip by the semiconductor industry.



Figure 3. Beginnings of metallurgy in Western Anatolia - Archaeometallurgical research on Çukuriçi Höyük. Vienna Institute for Archaeological Science

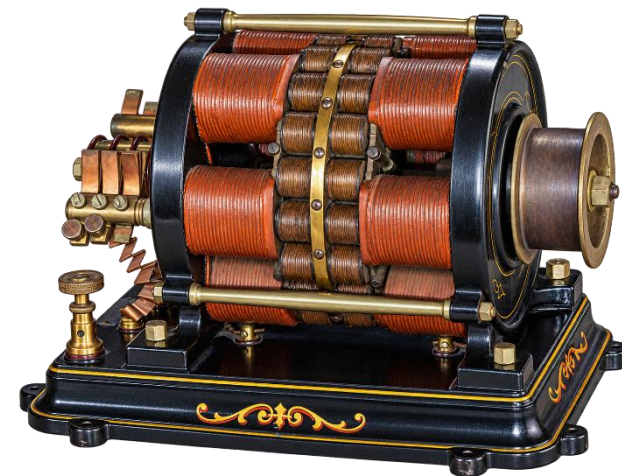


Figure 4. Dynamo produced by the Fuller Electric Company in 1879 to generate electricity for lighting systems.

COPPER TODAY

Global demand for copper has increased nearly fourfold over the past five decades, driven by economic development, urbanisation and the expansion of copper-intensive sectors such as building construction, power and telecommunications infrastructure, transportation, industrial machinery, and electrical and electronic equipment. More recently, copper's importance has increased further with the growth of electrification, renewable energy, electric vehicles and digital infrastructure, including data centres.

Some key indicators of global copper production and usage in 2025 are presented below.

Copper Production Highlights

- Preliminary figures indicate that global **copper mine production** reached ~23.2 million tonnes (Mt) in 2025, with Chile leading production at around 23% of the global total.
- Global **copper smelter production** totalled ~24.4 Mt, led by China with approximately 56% of total output.
- Global **refined copper production** reached ~28.7 Mt, with China contributing around 48% of the total. Global secondary refined production represented about 19% of the world total.

Copper Usage Highlights

- Global **refined copper usage** reached ~28.2 Mt, with China accounting for around 59% of the total.

- According to the International Wrought Copper Council (IWCC), the **building construction sector** (covering copper use in plumbing, building, architecture, communications, and electrical power systems in residential, commercial, and industrial buildings) was the largest end-use market in 2025, followed by consumer & general products, cooling, and electronics.
- **Emerging and expanding copper applications** include electric vehicles and charging infrastructure, renewable energy and grid systems, high-efficiency motors and heat pumps, advanced electronics, and digital infrastructure such as AI data centres, where copper is increasingly used in high-performance power distribution and cooling systems.

In the chapters that follow, more in-depth information is presented on copper production, trade, usage, and recycling. For the most up-to-date information on the global copper market, please visit our website at www.icsg.org.

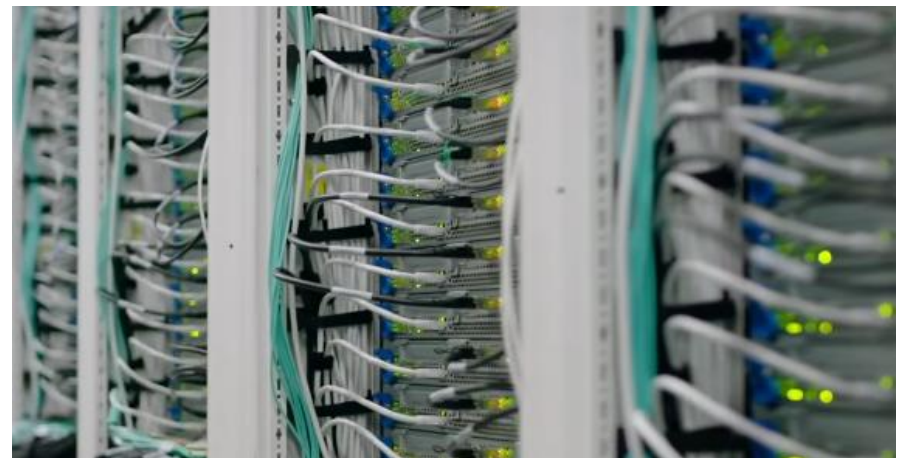


Figure 5. Rear of rack at Microsoft's massive data centre in Quincy, Washington.

2. COPPER RESOURCES AND LONG-TERM AVAILABILITY

COPPER RESERVES AND RESOURCES

Typically, the future availability of minerals is based on the concept of reserves and resources. Reserves are deposits that have been discovered, evaluated, and assessed to be economically profitable to mine. Resources are far bigger and include reserves, discovered deposits that are potentially profitable, and undiscovered deposits that are predicted based on preliminary geological surveys (see definitions below).

RESOURCE AND RESERVE CLASSIFICATION FOR MINERALS ^{1/}

Resource: A concentration of naturally occurring solid, liquid, or gaseous material in or on the Earth's crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible.

Identified Resources: Resources for which location, grade, quality, and quantity are known or estimated from specific geologic evidence. Identified resources include economic, marginally economic, and subeconomic components.

Undiscovered Resources: Resources, the existence of which are only postulated, comprising deposits that are separate from identified resources. Undiscovered resources may be postulated in deposits of such grade and physical location as to render them economic, marginally economic, or subeconomic.

Reserves: That part of the reserve base (defined as part of an identified resource that meets specified minimum physical and chemical criteria related to current mining and production practices, including those for grade, quality, thickness, and depth) that could be economically extracted or produced at the time of determination. The term "reserves" need not signify that extraction facilities are in place and operative.

According to the United States Geological Survey (USGS), global copper reserves amounted to around 980 million tonnes (Mt) in 2025. The most recent global assessment of copper resources estimated that, as of 2015, identified unextracted resources contained around 1,500 Mt of copper, while undiscovered resources contained an estimated 3,500 Mt in the deposit types assessed (see Page 12). These estimates exclude substantial copper resources associated with deep-sea nodules and land-based and submarine massive sulphide deposits. Continued exploration, technological advances and changing economic conditions can increase both identified resources and economically recoverable reserves.

WORLD COPPER RESOURCES, RESERVES, MINE CAPACITY AND PRODUCTION

(not to scale)

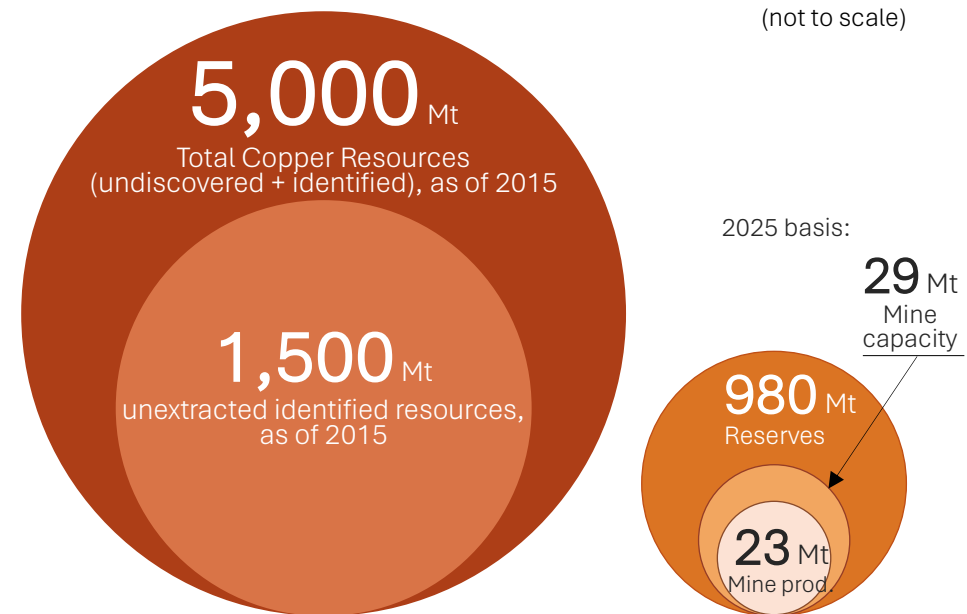


Figure 6. Sources: USGS for resources and reserves; ICSG for capacity and production

1/ Source: USGS at <https://pubs.usgs.gov/periodicals/mcs2026/mcs2026.pdf>

ASSESSMENT OF GLOBAL COPPER RESOURCES

In 2015, the U.S. Geological Survey (USGS) completed the first geology-based global assessment of undiscovered copper resources, focusing on porphyry copper and sediment-hosted stratabound copper deposits, the two deposit types that together account for around 80% of global copper supply.

The assessment estimated that at least 3,500 million metric tonnes (Mt) of undiscovered copper may occur worldwide in these deposit types, comprising approximately 3,100 Mt in porphyry deposits and 420 Mt in sediment-hosted stratabound deposits.

At the same time, USGS estimated that approximately 2,100 Mt of copper had been discovered in these deposit types, comprising about 1,800 Mt in porphyry deposits and 310 Mt in sediment-hosted stratabound deposits. This total includes around 600 Mt of copper already produced globally between 1879 and 2012, leaving approximately 1,500 Mt of identified, unextracted copper resources.

Together with an estimated 3,500 Mt of undiscovered resources, this implies around 5,000 Mt of remaining identified and undiscovered copper resources. Including the approximately 600 Mt already produced, the assessment indicated a total global copper endowment of around 5,600 Mt in the two deposit types assessed.

Source: USGS, *Assessment of Undiscovered Copper Resources of the World*, 2015. Scientific Investigations Report 2018–5160 Version 1.2, Dec 2021. <https://pubs.er.usgs.gov/publication/sir20185160>

IDENTIFIED AND UNDISCOVERED COPPER RESOURCES BY REGION, 2015

Region	Type of copper deposit	Identified resources (Mt)	Undiscovered resources (Mt)
South America	Porphyry	800	750
	Sediment-hosted	0.39	NA
Central America and Caribbean	Porphyry	43	170
	Sediment-hosted	NA	NA
North America	Porphyry	470	400
	Sediment-hosted	14	55
Northeast Asia	Porphyry	8.8	260
	Sediment-hosted	NA	NA
Central and Eastern Asia	Porphyry	140	450
	Sediment-hosted	47	55
Southeast Asia	Porphyry	56	420
	Sediment-hosted	4.5	NA
Southeast Asia Archipelagos	Porphyry	130	300
	Sediment-hosted	NA	NA
Eastern Australia	Porphyry	15	21
	Sediment-hosted	NA	NA
Middle East	Porphyry	61	200
	Sediment-hosted	7.9	13
Europe	Porphyry	51	140
	Sediment-hosted	79	130
Africa	Porphyry	NA	NA
	Sediment-hosted	160	170
Porphyry copper deposits		1,800	3,100
Sediment-hosted copper deposits		310	420
Global total copper resources		2,100	3,500

Table 1. Aggregated assessment results for identified and undiscovered copper resources in porphyry copper and sediment-hosted stratabound copper deposits by world region. Resources are reported to two significant figures. Mt: millions of metric tons; NA: not applicable, as no quantitative assessment was done.

ARE WE GOING TO RUN OUT OF COPPER?

It is highly improbable that the world will run out of copper ^{1/}. Since 1960, global copper reserves have, on average, represented around 40 years of mine production (known as Reserve Life), while the much larger resource base has represented more than 200 years. Reserves are not a fixed stock: exploration, technological advances and changing economic conditions continually convert resources into economically recoverable reserves.

This is illustrated by the evolution of the reserve base. Between 2000 and 2025, approximately 464 Mt of copper were mined, while reported world reserves increased by about 547 Mt, from 433 Mt to 980 Mt. Thus, despite continued extraction and rising production, the amount of copper classified as reserves has increased substantially.

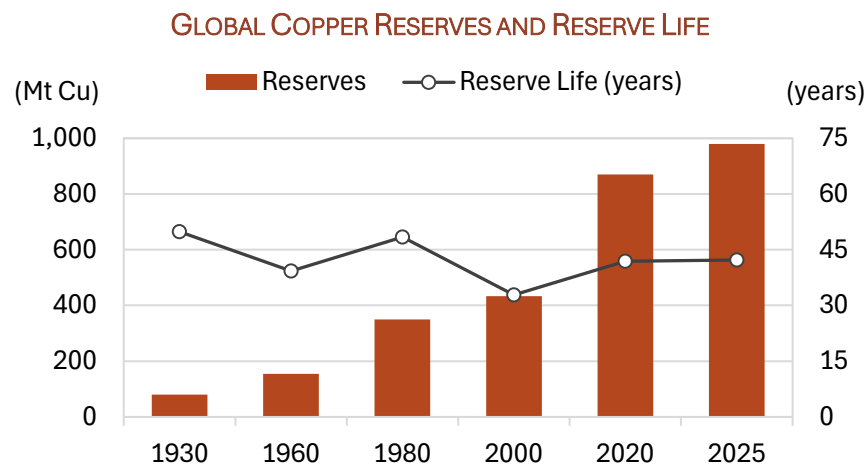


Figure 7. Reserve Life: Reserves-to-Production Ratio (R/P ratio), also called Static Reserve Life, expressed in years. Sources: USGS for reserves data; ICSG for production data.

The challenge, therefore, is less about geological availability than about bringing sufficient copper to market when it is needed. Exploration and technology can unlock additional resources, but investment, permitting, infrastructure and lengthy project development times can constrain the pace at which new mine supply becomes available.

Recycling also plays a major role in long-term copper availability. Copper can be recycled repeatedly without loss of its inherent properties, allowing today's primary copper to become tomorrow's secondary raw material. However, the loop cannot be completely closed for two reasons: (i) demand will continue to increase due to population growth, product innovation, and economic development; (ii) in most applications, copper remains in use for decades.

Consequently, meeting future copper demand will require a combination of primary and recycled materials, supported by continued investment, innovation and improvements in recycling and resource efficiency.

Available evidence indicates that physical depletion of copper is highly unlikely. The greater challenge is ensuring that sufficient economically viable supply can be brought to market in time to meet growing demand.

^{1/} Based on the International Copper Association briefing note on copper's long-term availability. See <http://copperalliance.org/about-copper/long-term-availability/>

FUTURE COPPER SUPPLY: MINE PROJECTS

Several copper mine projects are currently being evaluated or developed and are expected to contribute to future supply growth. In its Directory of Copper Mines, Smelters and Refineries, ICSG provides detailed global information on projects under development and at the feasibility or exploration stage. Based on the latest edition of the Directory, the chart below highlights major copper mine projects with annual production capacity above 100 thousand tonnes (kt) of copper. Together, these projects represent around 10 million tonnes of additional annual copper production capacity. Numerous smaller projects are also under development or assessment.

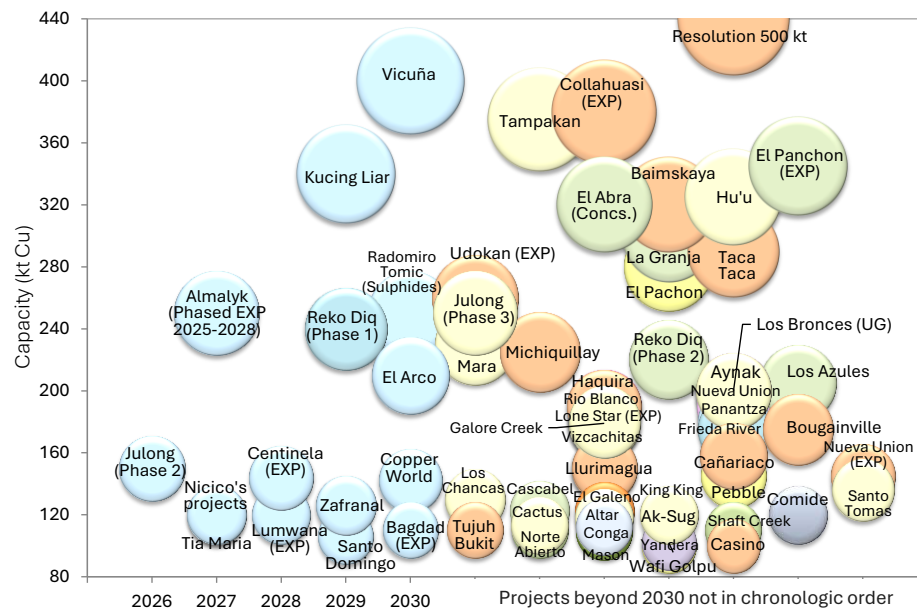


Figure 8. Major Copper Mine Projects with Capacity Above 100 kt/y

DEEP-SEA MINERAL EXPLORATION

The ocean covers more than 70% of the Earth's surface, and the seabed contains important mineral resources, including copper. These occur in deposits such as polymetallic nodules and polymetallic sulphides. As copper demand grows, deep-seabed deposits could potentially provide an additional source of supply, although their future contribution will depend on technological, economic, environmental and regulatory factors.

Interest in the exploration and potential exploitation of deep-seabed minerals has increased with advances in science and technology. The International Seabed Authority (ISA), established under the United Nations Convention on the Law of the Sea, regulates mineral-related activities in the international seabed area beyond national jurisdiction.

The ISA has adopted regulations for prospecting and exploration and continues to develop the rules that would govern future exploitation. As of September 2026, no commercial exploitation has been approved. The ISA is also required to ensure effective protection of the marine environment from harmful effects arising from activities in the Area.

ICSG has identified a few offshore copper exploration projects that could potentially enter production in the future. The most advanced is The Metals Company's polymetallic nodule project in the Clarion-Clipperton Zone (CCZ) of the Pacific Ocean. The company is targeting commercial production before 2030, subject to obtaining the necessary regulatory approvals.

3. COPPER PRODUCTION

HOW IS COPPER PRODUCED?

Geologists look for signs and anomalies that would indicate the presence of a mineral deposit. Under the right geological, economic, environmental, and legal conditions, mining can proceed.

Primary copper production starts with the extraction of copper-bearing ores, principally by surface or underground mining. Open-pit mining is the predominant mining method worldwide. Depending on the type of ore, copper is subsequently recovered through either concentration followed by pyrometallurgical processing, or through hydrometallurgical processing.

Sulphide ores are generally crushed and ground before being concentrated by flotation. Copper concentrates typically contain around 28% copper, although grades can range from 20% to above 40%. During smelting, sometimes preceded by roasting, the concentrate is transformed into a copper-rich matte, typically containing 50–70% copper. The molten matte is then processed in a converter, obtaining blister copper, which contains around 98.5–99.5% copper. The blister copper is subsequently fire-refined and cast into anodes, which are electrorefined to produce copper cathodes assaying over 99.99% copper.

Alternatively, in the hydrometallurgical route, copper is recovered mainly from oxide ores and some sulphide ores. The ore is leached to dissolve the copper into solution, which is then purified and concentrated by solvent extraction (SX). Copper is subsequently

recovered from the solution by electrowinning (EW), producing high-purity copper cathodes. ICSG estimates that in 2025, SX-EW production represented ~22% of total copper mine production.

Refined copper production derived from mine production (either from metallurgical treatment of concentrates or SX-EW) is referred to as “primary copper production”, as obtainable from a primary raw material source. However, there is another important source of raw material, which is scrap. Copper scrap derives either from production waste generated during copper semi-manufacturing and finished product fabrication (‘new scrap’) or from obsolete, end-of-life products (‘old scrap’).

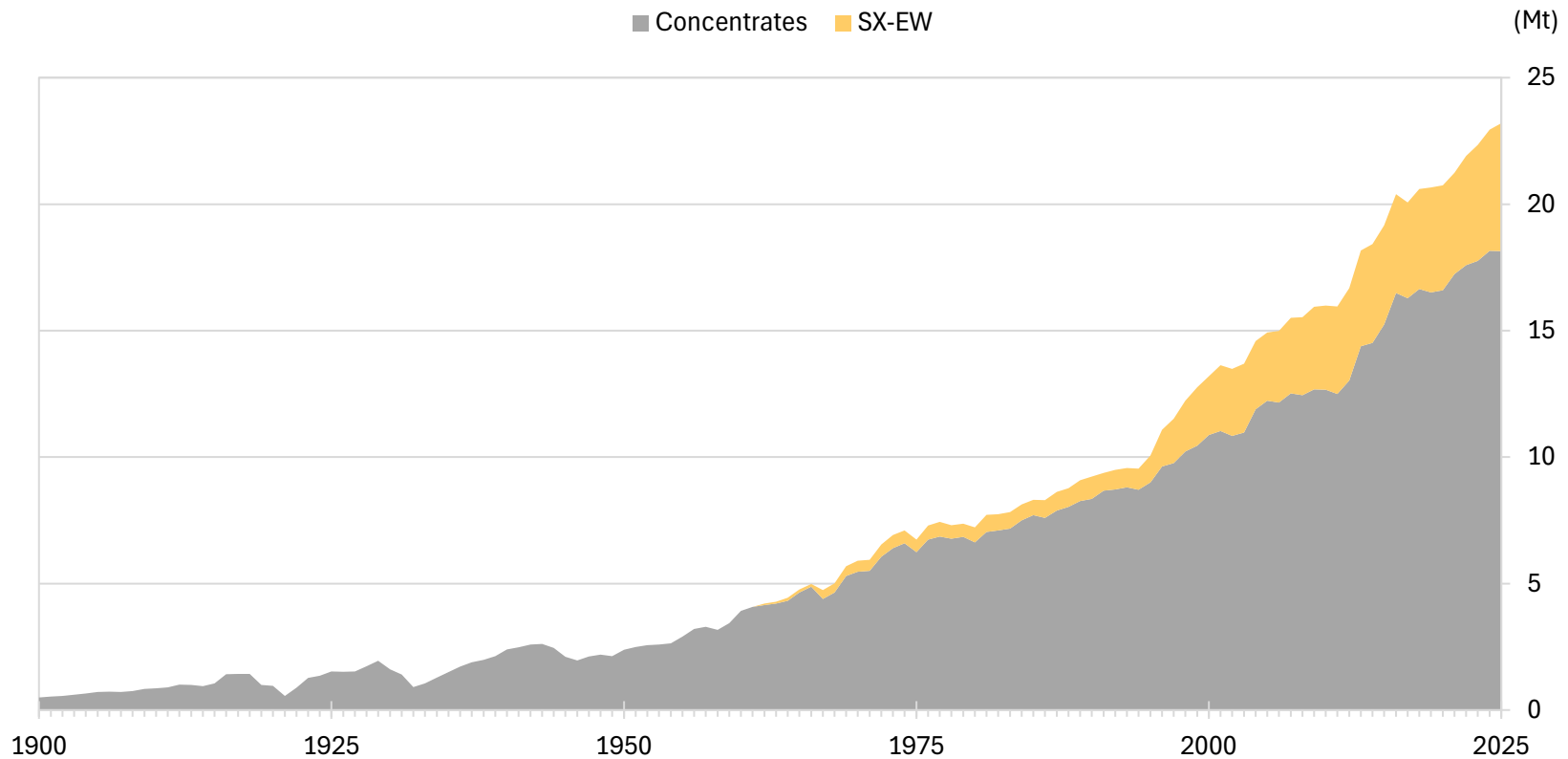
Refined copper produced from recycled scrap is categorised as “secondary copper production”. Secondary producers use processes similar to those employed for primary production. ICSG estimates that in 2025, at the refinery level, secondary refined copper production reached 19% of total copper refined production.



Figure 9. Glencore's Canadian Copper Refinery (CCR)

WORLD COPPER MINE PRODUCTION, 1900–2025

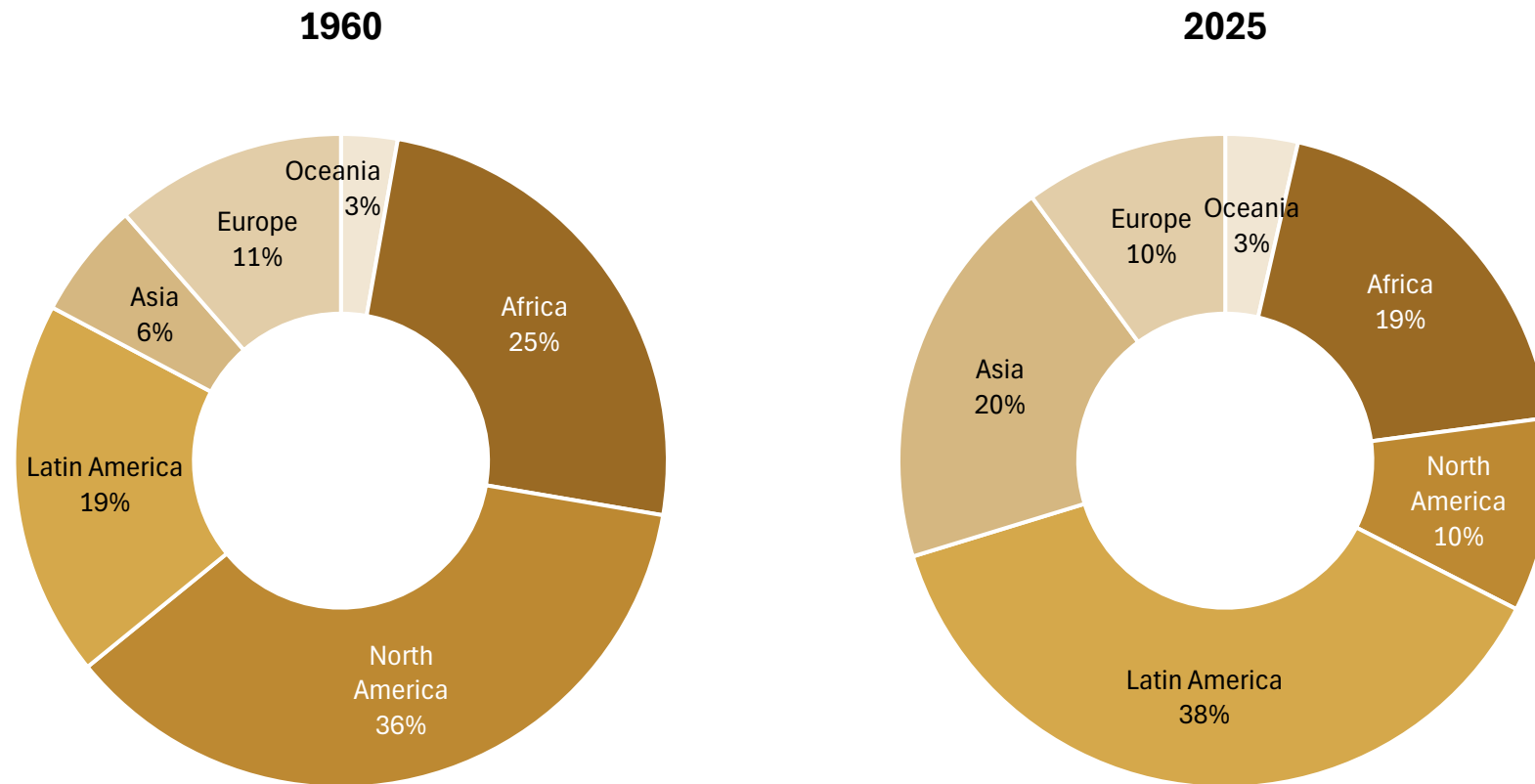
Million metric tonnes (Mt) of copper content



World copper mine production has increased substantially since 1900, rising from less than 500 thousand tonnes to 23.2 million tonnes in 2025, equivalent to a compound annual growth rate (CAGR) of 3.12%. SX-EW production, virtually non-existent before the 1960s, has since become an important source of copper, reaching 5.1 million tonnes and accounting for around 22% of world mine production in 2025.

WORLD COPPER MINE PRODUCTION BY REGION, 1960 vs. 2025

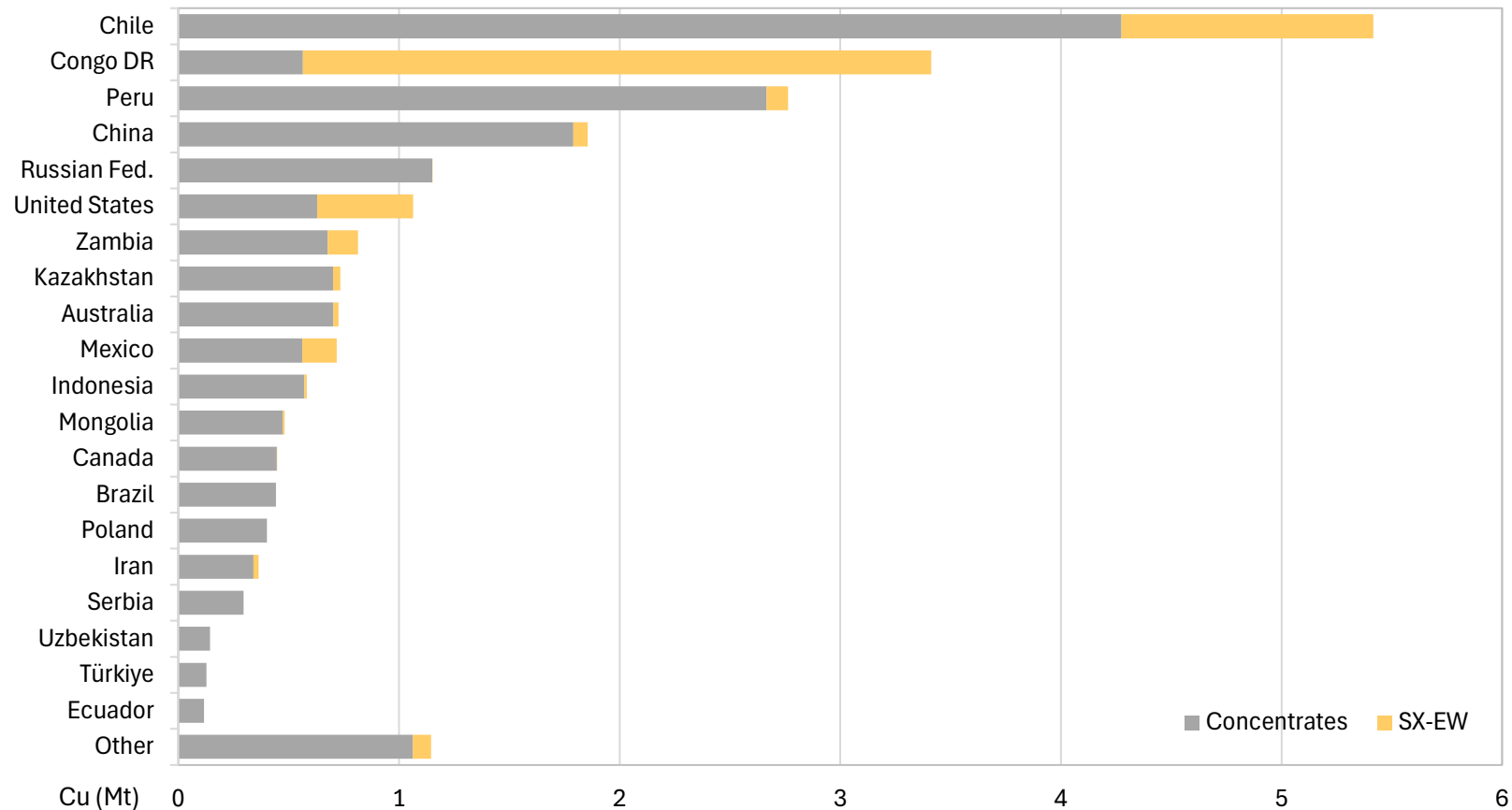
Percentage share (%)



The geography of global copper mine production has changed markedly since 1960. Latin America's share doubled from 19% to 38%, as production rose from 0.7 million tonnes (Mt) to 8.8 Mt in 2025. Asia also gained prominence, increasing its share from 6% to 20% and reaching 4.6 Mt. In contrast, North America's share fell from 36% to 10%. Africa's share, at 19% in 2025 compared with 25% in 1960, has been rising again in recent years, driven by strong production growth in the DRC–Zambia Copperbelt.

WORLD COPPER MINE PRODUCTION BY COUNTRY, 2025

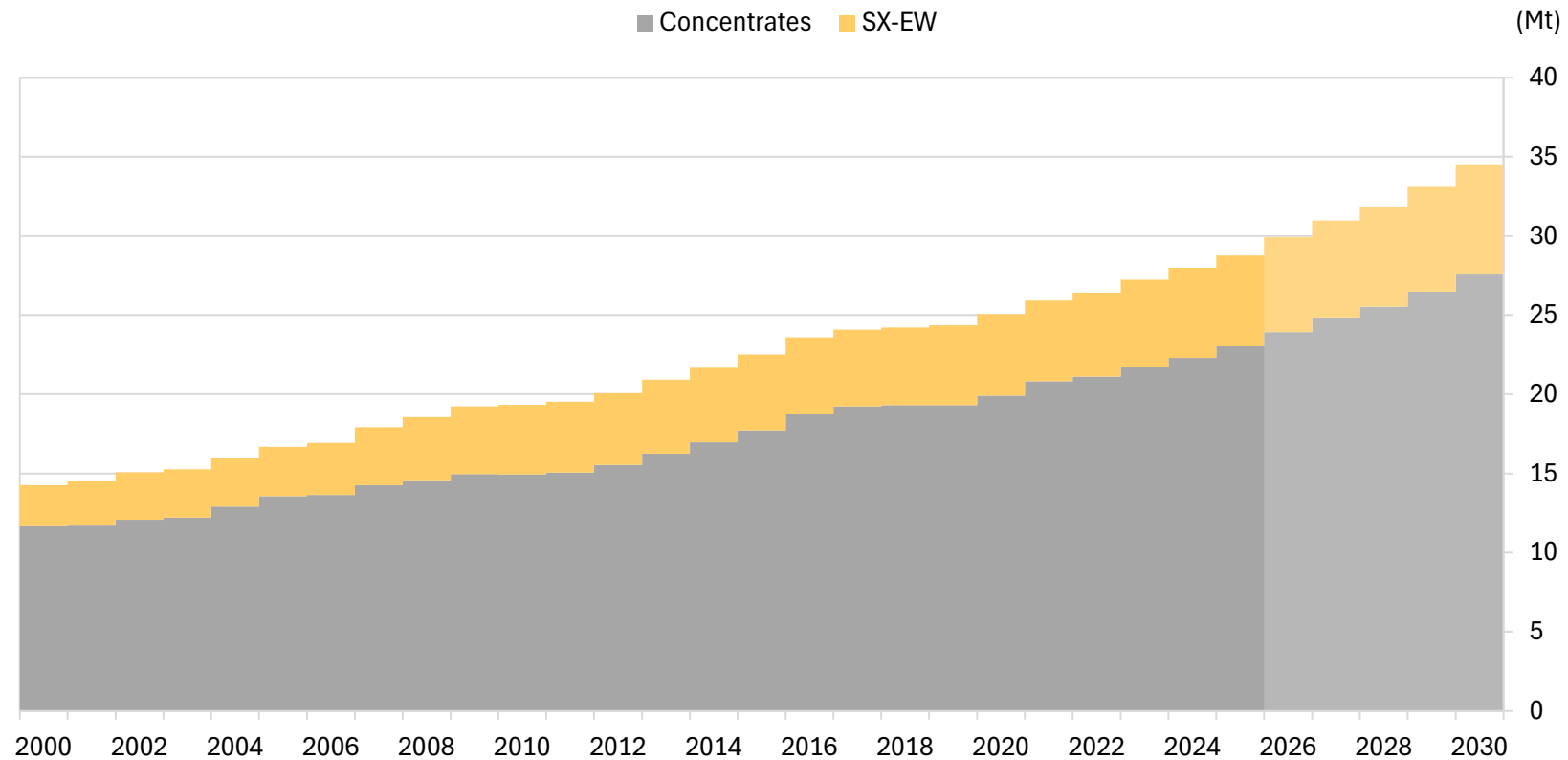
Million metric tonnes (Mt) of copper content



In 2025, Chile remained the world's largest copper mine producer, with 5.4 Mt (23% of global output), followed by the DRC (15%) and Peru (12%). The DRC has recorded particularly strong growth in recent years, consolidating its position as the world's second-largest producer. SX-EW accounts for the majority of copper mine production in the DRC and a significant share in Chile and the United States, while most other countries produce predominantly concentrates, including Peru, where production is almost entirely concentrate-based.

WORLD COPPER MINING CAPACITY TRENDS, 2000–2030

Million metric tonnes (Mt) of copper content.



Global copper mining capacity has more than doubled from 14.3 Mt in 2000 to 28.8 Mt in 2025, driven predominantly by growth in concentrate-producing mines, particularly since the mid-2010s, while SX-EW capacity has expanded more gradually. A further 5.7 Mt is expected to be added between 2025 and 2030, lifting global capacity to 34.5 Mt, equivalent to a 3.7% CAGR, with around 80% of the increase coming from concentrate operations. The capacity utilisation rate, the ratio of production to capacity, stood at around 81% in 2025.

Note: Capacity data reflect production capability and should not be interpreted as actual or forecast production.

TOP 20 OPERATING COPPER MINES BY CAPACITY, 2026

Thousand metric tonnes (kt) of copper content

Mine	Cap. (kt)	Type	Country	Operator / Owner(s)
1. Escondida	1350	Conc: 1150 kt; SX-EW: 200 kt	Chile	BHP (57.5%), Rio Tinto Corp. (30%), Japan Escondida (12.5%)
2. Grasberg	800	Concentrates	Indonesia	PT Freeport Indonesia (PT Inalum and the provincial/Regional Government 51.2% and Freeport-McMoRan Inc 48.8%)
3. Collahuasi	623	Concentrates	Chile	Anglo American (44%), Glencore plc (44%), Mitsui-led consortium (12%)
4. Morenci	570	Conc: 170 kt; SX-EW: 400 kt	United States	Freeport-McMoRan 72%, Sumitomo Metal Mining Arizona 15%, SMM Morenci 13%.
5. Kamo-a-Kakula	550	Concentrates	DRC	Ivanhoe Mines 39.6%, Zijin Mining 39.6%, Crystal River 0.8%, DRC Government 20%
5. Cerro Verde	550	Conc: 500 kt; SX-EW: 50 kt	Peru	Freeport-McMoRan 55.08%, Sumitomo 21%, Compañía de Minas Buenaventura 19.58%
7. Buenavista del Cobre	535	Conc: 360 kt; SX-EW: 175 kt	Mexico	Grupo Mexico
8. Tenke Fungurume	500	SX-EW	DRC	CMOC Group 80%, La Générale des Carrières et des Mines (Gécamines) 20%
9. Antamina	450	Concentrates	Peru	BHP (33.75%), Teck (22.5%), Glencore plc (33.75%), Mitsubishi Corp. (10%)
10. Los Pelambres	445	Concentrates	Chile	Antofagasta Plc (60%), Nippon Mining (25%), Mitsubishi Materials (15%)
11. Oyu Tolgoi	420	Concentrates	Mongolia	66% Rio Tinto, 34% Government of Mongolia
12. Cobre Panama [on C&M]	400	Concentrates	Panama	First Quantum Minerals Ltd 90%, Korea Panama Mining Corp. (LS-Nikko Copper Inc. and Korean Resources Corporation) 10%
12. Las Bambas	400	Concentrates	Peru	MMG (62.5%), Guoxin International Investment Corporation Limited (22.5%), CITIC Metal Co., Ltd. (15%)
12. Polar Division (Norilsk/ Talnakh Mills)	400	Concentrates	Russian Fed.	Norilsk Nickel
15. Quellaveco	340	Concentrates	Peru	Anglo American 60%, Mitsubishi Corp. 40%
16. Bingham Canyon	310	Concentrates	United States	Kennecott (Rio Tinto)
17. El Teniente	301	Conc: 300 kt; SX-EW: 1 kt	Chile	Codelco
18. Chuquibambilla	300	Conc: 250 kt; SX-EW: 50 kt	Chile	Codelco
18. Radomiro Tomic	300	Conc: 100 kt; SX-EW: 200 kt	Chile	Codelco
18. Julong	300	Concentrates	China	Tibet Julong Copper Co. (Zijin Mining, 58.16%)
18. Kamoto	300	SX-EW	DRC	Katanga Mining (indirectly wholly owned by Glencore) 70%, Gécamines 20%, SIMCO 5%, DRC Government 5%
18. Almalyk (Kalmayr, Sary-Cheku)	300	Concentrates	Uzbekistan	Almalyk Mining and Metallurgical Combine

Note: Tied operations are included, so the table may contain more than 20 entries. Capacity data reflect production capability and should not be interpreted as actual or forecast production.

CONSTRAINTS ON COPPER SUPPLY

Despite a large global copper resource base and strong incentives to develop new supply, bringing additional mine production to market remains challenging. The key constraint is increasingly not the availability of copper in the ground, but the time, cost and complexity of converting resources into reliable production.

Ore quality and mining complexity: Declining grades, greater mine depths, higher stripping ratios and more complex ores require more material to be mined and processed, increasing capital, energy, water and operating requirements.

Permitting and project lead times: Copper projects can take many years to progress from discovery to production. Lengthy approvals, legal challenges, environmental reviews, land access, community consultation and regulatory processes can significantly extend development timelines.

Capital and costs: New copper mines require substantial upfront investment and are becoming increasingly capital-intensive. Higher construction, equipment, labour and financing costs can weaken project economics and delay investment decisions.

Water and energy: Water scarcity is a growing challenge in several major mining regions, while desalination and seawater pumping require additional infrastructure and energy. Power availability, grid reliability, and decarbonisation costs can further constrain supply.

Environmental and social acceptance: Water use, tailings, biodiversity and other environmental impacts face increasing

scrutiny. Community and Indigenous consultation, land access and benefit sharing can also influence whether and how quickly projects proceed.

Exploration and project pipeline: Exploration is increasingly focused on existing mines and brownfield opportunities. While these can provide lower-risk incremental supply, a limited pipeline of major greenfield discoveries could constrain longer-term growth.

Policy and geopolitical risk: Changes in taxation, royalties, state participation, resource nationalism, and regulatory requirements can affect project economics and investment. Geographic concentration of supply also increases exposure to political, security and trade-related disruptions.

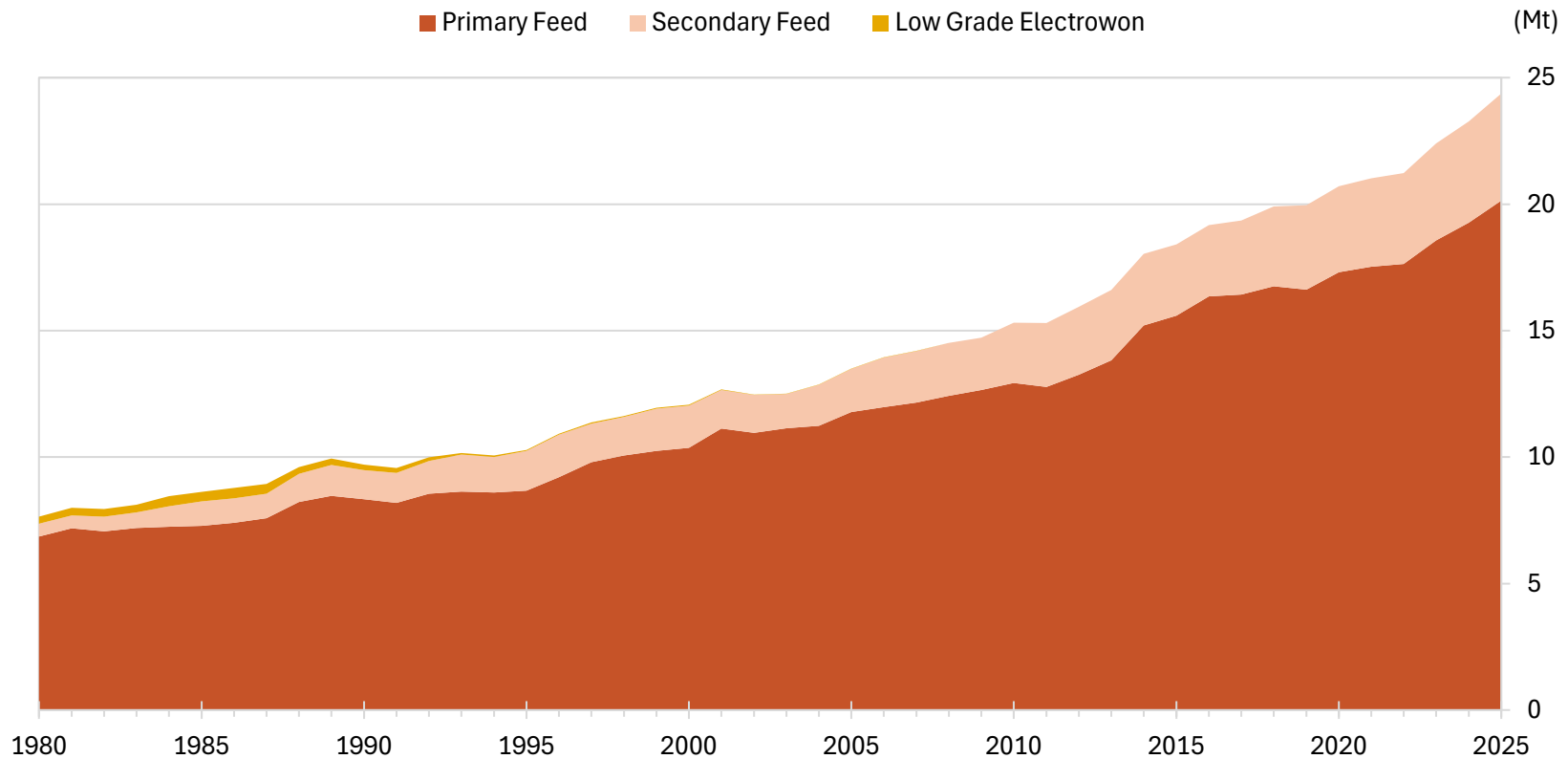
Infrastructure, labour and inputs: Remote deposits may require major investment in power, transport and water infrastructure. Skilled labour, contractors and equipment can also be constraints, while SX-EW operations may face sulphuric acid availability and cost pressures.

Operational execution: Installed capacity does not necessarily translate into production. Accidents, geotechnical problems, labour disruptions, equipment constraints and slower-than-expected ramp-ups can keep output below nameplate capacity.

Together, these factors explain why copper mine supply can respond only gradually to stronger demand. The challenge is not simply finding resources, but permitting, financing, building and successfully operating new capacity on schedule.

WORLD COPPER SMELTER PRODUCTION, 1980–2025

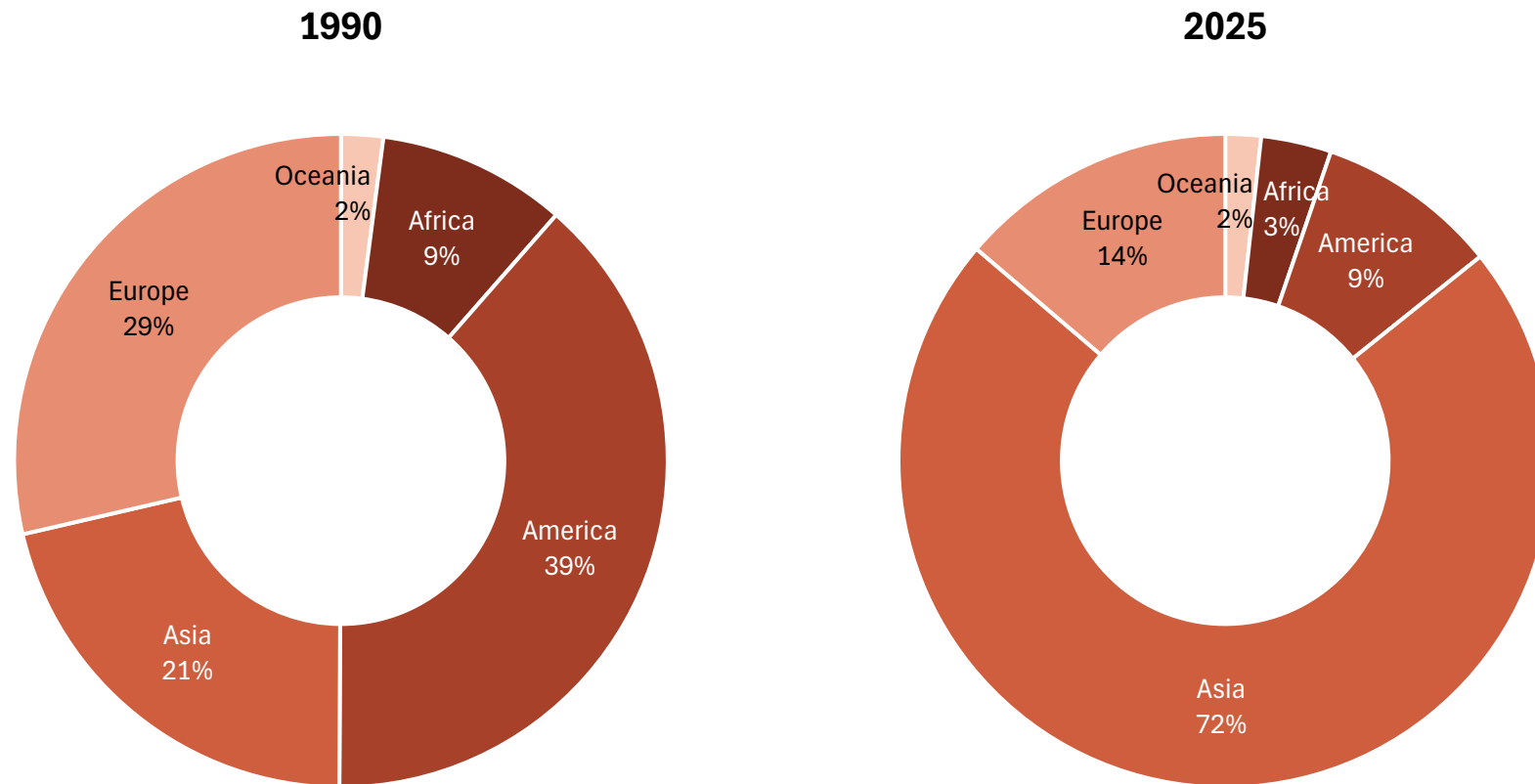
Million metric tonnes (Mt) of copper



Global copper smelter production has more than tripled from 7.6 Mt in 1980 to 24.4 Mt in 2025, equivalent to an average annual growth of around 2.6%. Growth has accelerated since the early 2010s, driven largely by major additions to primary smelting capacity, particularly in China. Primary-feed production reached 20.1 Mt in 2025, accounting for around 83% of the total, while secondary-feed production increased to 4.2 Mt (17%), reflecting the growing role of scrap in the smelting sector.

WORLD COPPER SMELTER PRODUCTION BY REGION, 1990 vs. 2025

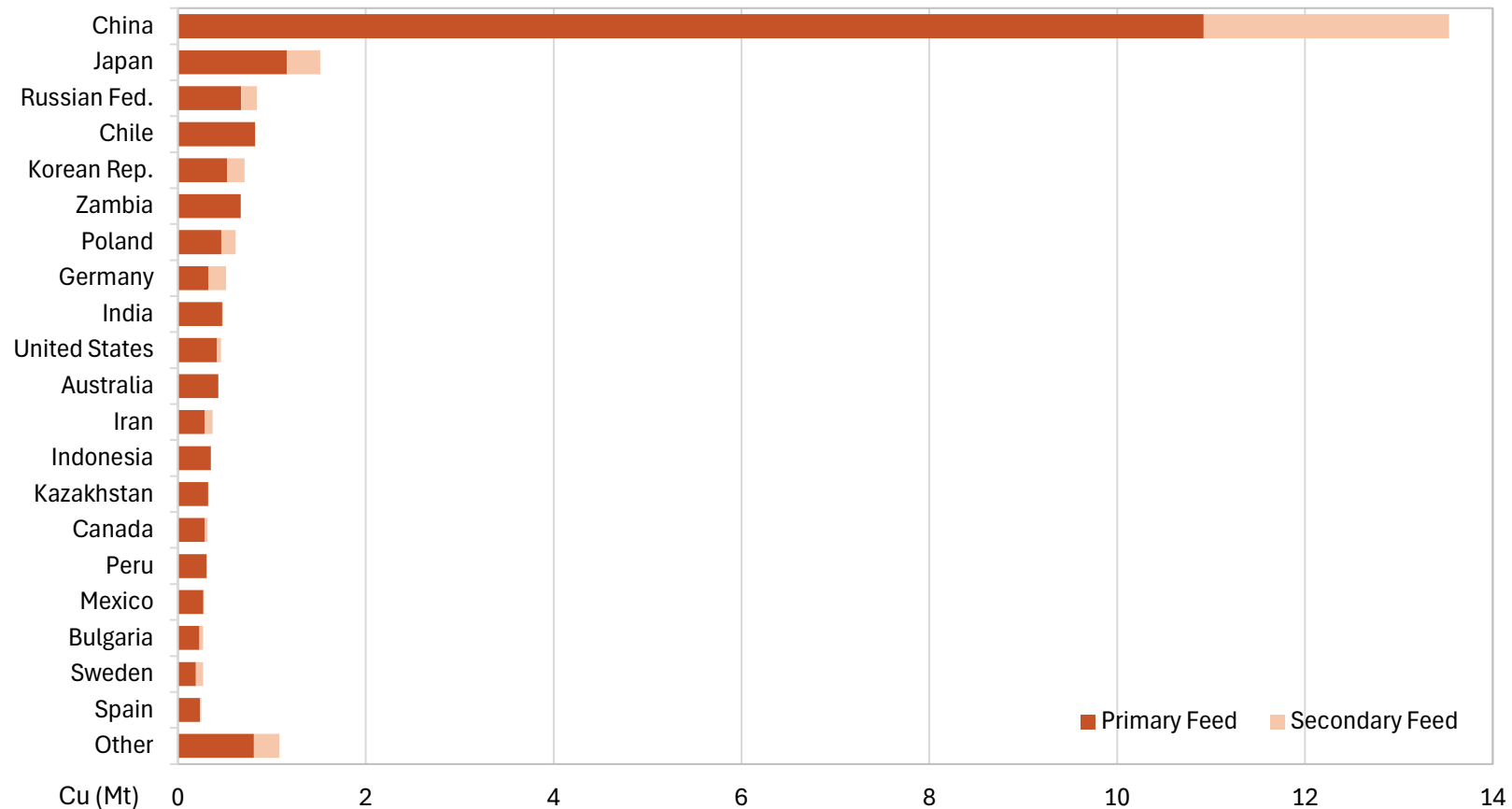
Percentage share (%)



As smelter production in China expanded rapidly, Asia's share of global copper smelter production surged from 21% in 1990 to 72% in 2025, establishing the region as the dominant centre of global copper smelting. Conversely, America's share fell from 39% to 9%, reflecting both rapid Asian growth and declining output from older smelters, while Europe's share decreased from 29% to 14% despite broadly stable production.

WORLD COPPER SMELTER PRODUCTION BY COUNTRY, 2025

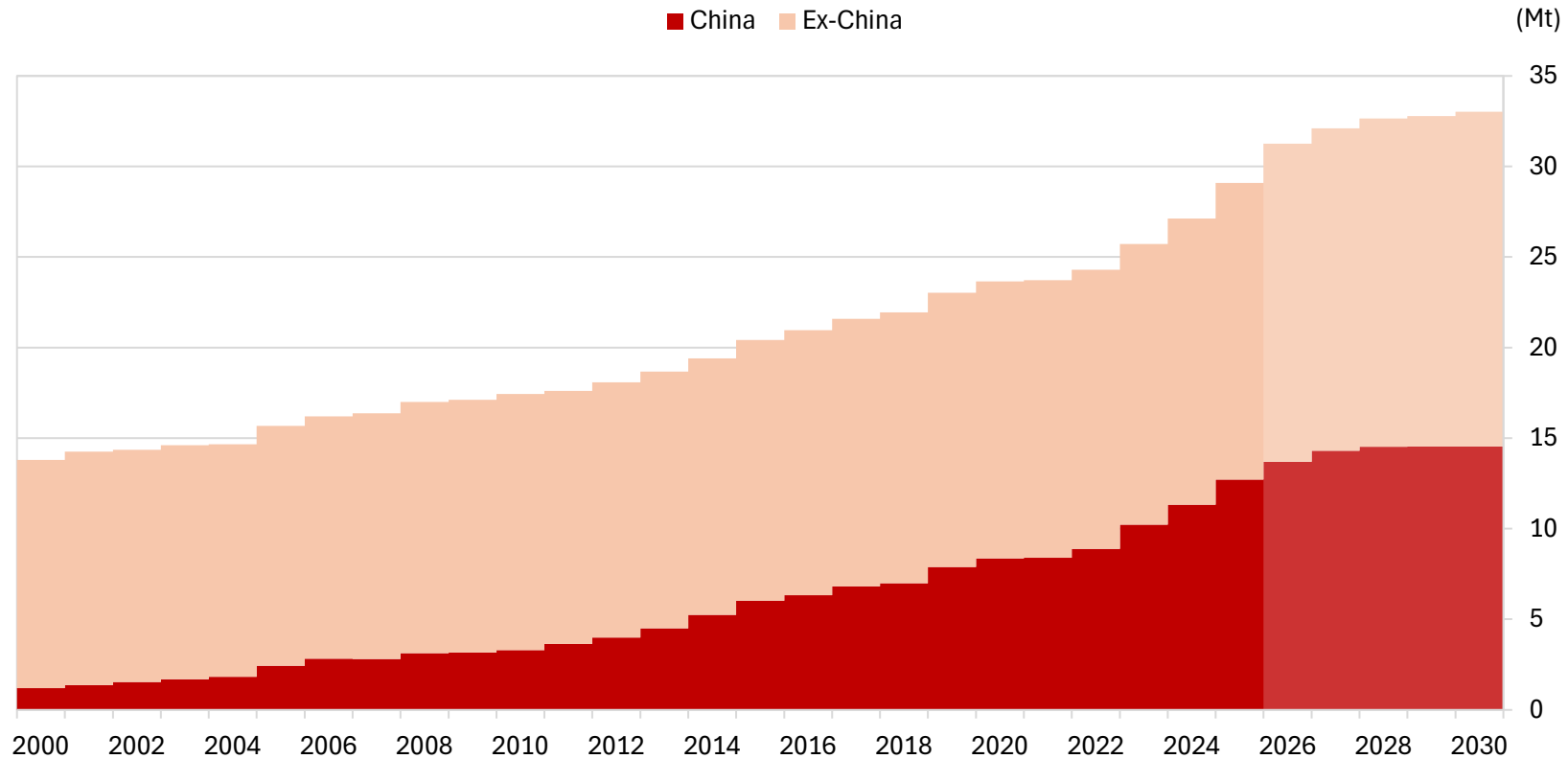
Million metric tonnes (Mt) of copper



China remained by far the world's largest copper smelter producer in 2025, reflecting its dominant position in both primary and secondary smelting. Japan ranked a distant second with secondary feed making a significant contribution, followed by Russia and Chile; Chile's production was entirely primary feed based. China alone accounted for more than 60% of global secondary-feed smelter production, underlining its major role in copper recycling.

WORLD COPPER SMELTING CAPACITY TRENDS, 2000–2030

Million metric tonnes (Mt) of copper



Global copper smelting capacity more than doubled from 13.8 Mt in 2000 to 29.1 Mt in 2025, driven overwhelmingly by China, which accounted for more than three-quarters of the increase. China's capacity expanded more than tenfold to 12.7 Mt, raising its global share from 9% to 44%. Capacity growth accelerated sharply in 2024-2025, with about 3.4 Mt added globally, including major projects in China, India, Indonesia and the DRC. By 2030, global capacity is expected to increase by a further 3.9 Mt to 33.0 Mt, with China's share remaining at ~44%.

Note: Capacity data reflect production capability and should not be interpreted as actual or forecast production.

TOP 20 OPERATING COPPER SMELTERS BY CAPACITY, 2026

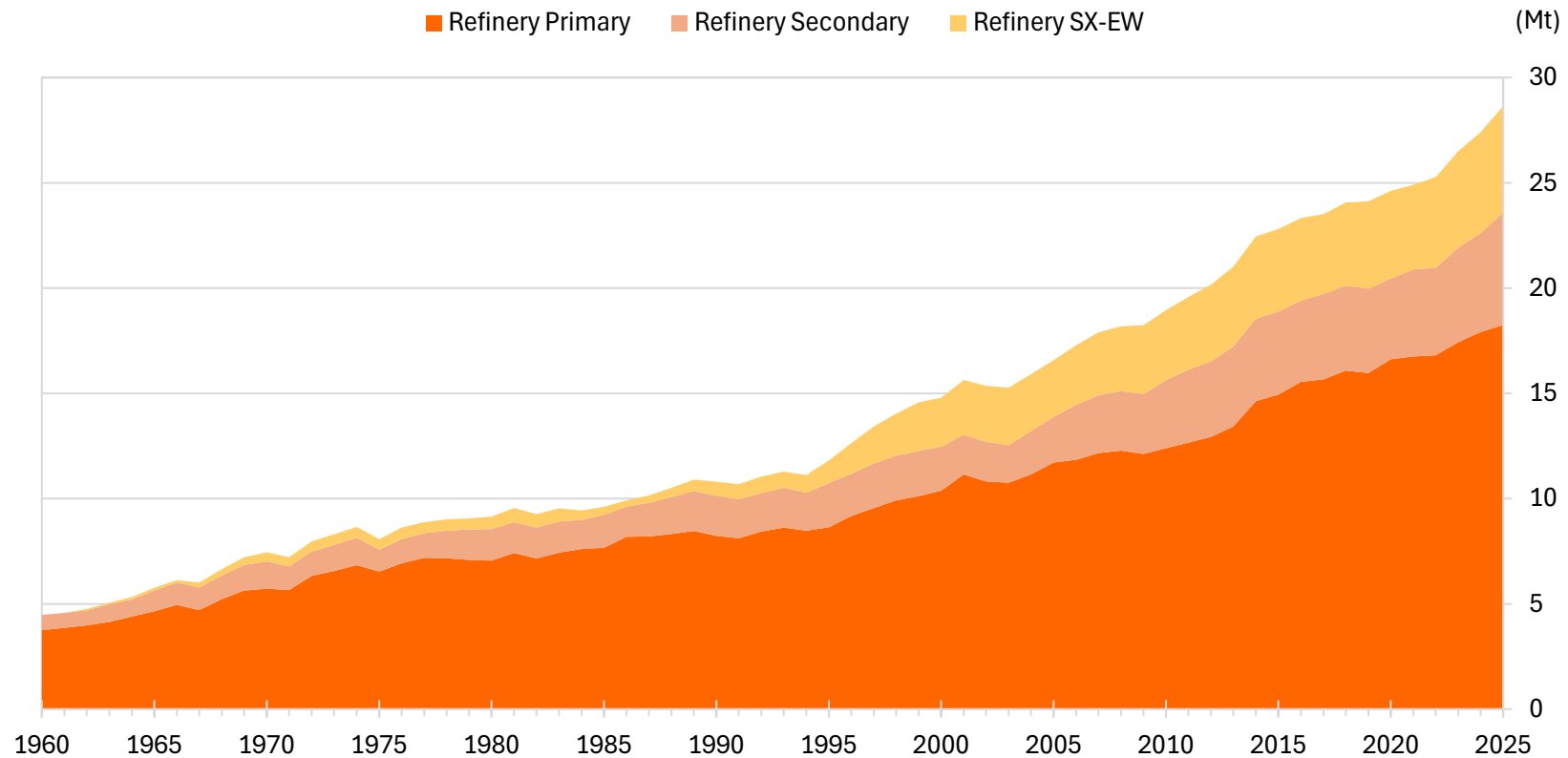
Thousand metric tonnes (kt) of copper

Smelter	Cap. (kt)	Process	Country	Operator / Owner(s)
1. Jinguan Tongling (I & II)	680	Ausmelt: 200 kt; Flash Smt: 480 kt	China	Tongling Nonferrous Metals 100%
2. Nanko Copper (smelter)	675	Side-Blown	China	Guangxi Nanko Copper Co.
3. Jinchuan Gansu	656	Side-Blown: 358 kt; Flash Smelter: 298 kt	China	Gansu state-owned Assets Investment Group 47.97%, Gansu Government State-owned Assets Supervision and Administration Commission 11.6%, The China Development Bank 13.53%, Other investors 26.9%
4. Glogow (I & II)	540	Outokumpu Flash (230 kt & 310 kt)	Poland	KGHM Polska Miedz, S.A. (KGHM)
5. Guixi (smelter)	520	Flash Smelter (220 kt & 300 kt)	China	Jiangxi Copper Corporation Limited (JCC) 45.72%, HKSCC Nominees Limited 29.04%, Other 25.24%
5. Onsan (I & II)	520	Outokumpu Flash: 220 kt; Mitsubishi Continuous: 300 kt	Korean Rep.	LS MnM
7. Kamoa Smelter	500	Flash Smelter	DRC	Ivanhoe Mines 39.6%, Zijin Mining 39.6%, Crystal River 0.8%, DRC Government 20%
7. Tongling (new smelter)	500	Flash Smelter	China	Tongling Nonferrous Metals 100%
7. Adani (smelter)	500	Flash Smelter	India	Adani Enterprises
10. Manyar (smelter)	470	Outokumpu Flash	Indonesia	PT-FI (Freeport-McMoRan Inc. 48.76%)
11. Toyo (smelter)	460	Outokumpu Flash	Japan	Sumitomo Metal Mining Co. Ltd.
12. Chuquicamata (smelter)	450	Outokumpu/ Teniente Converter	Chile	Codelco
12. Chifeng Jintong (smelter)	450	Side-Blown	China	Chifeng Jintong Copper (Tongling Nonferrous Metals 50%, Beijing Dadi Yuantong 49%, Chengde Xigui Trading 1%)
12. Hamburg	450	Outokumpu, Contimelt, Electric	Germany	Aurubis
12. Saganoseki (smelter)	450	Outokumpu Flash	Japan	JX Nippon Mining & Metals Co., Ltd.
16. Birla Copper (Dahej)	420	Outokumpu Flash, Mitsubishi Cont.	India	Birla Group (Hindalco)
17. El Teniente (Caletones)	400	Reverberatory/ Teniente Conv.	Chile	Codelco
17. Baiyin	400	Bath-Smelting: 200 kt; Outokumpu Flash: 200 kt	China	Baiyin Non-Ferrous Metals (CITIC Guoan Group 30.39%, Gansu Provincial Asset Supervision & Administration Commission 18.52%, Gansu Provincial Industry Assets Management 15.29%, Others 35.8%)
17. Chifeng Yunnan (smelter)	400	Side-Blown	China	Chifeng Yunnan Copper (Yunnan Copper 45%, Chifeng state-owned Capital Operation 45%, Jinfeng Copper 10%)
17. Chinalco Southeast Copper	400	Flash Smelter	China	Chinalco (Yunnan Copper 60%, Fujian Investment & Development Group Co., Ltd. 40%)
17. Guangxi Xingyue	400	Side-Blown	China	Zhejiang Xinyue Holding Group (30%), Individual investor (70%)
17. Hongsheng Copper	400	Flash Smelter	China	Yangxin Hongsheng Copper Industry Co. Ltd. (Daye Nonferrous 52%, China NO.15 Metallurgical Construction Group 24%, Huangshi Xingang Development Co. Ltd 16%, Huangshi State Asset Management Co. Ltd 8%)
17. Jinchuan (Fangchenggang smelter)	400	Flash smelter	China	Jinchuan Group 70%, Trafigura Pte Ltd. 20%, Trafigura Investment (China) Co., Ltd. 10%
17. Shandong Nonfermet Copper (former Shandong Dongying Fangyuan)	400	Bottom-Blown	China	Zhongjin Dongying 61.3% and other shareholders 38.7% (Creditors of Dongying Fangyuan)
17. Yanggu C&D (smelter)	400	Outokumpu Flash	China	Xiamen C&D 51%
17. Sterlite Smelter (Tuticorin) [on C&M]	400	Isasmelt Process	India	Vedanta
17. Norilsk (Nikelevy, Medny)	400	Reverb, Electric, Vanyukov	Russian Fed.	Norilsk Nickel
17. Kansanshi (smelter)	400	Isasmelt Process	Zambia	First Quantum Minerals Ltd

Note: Tied operations are included, so the table may contain more than 20 entries. Capacity data reflect production capability and should not be interpreted as actual or forecast production.

WORLD REFINED COPPER PRODUCTION, 1960–2025

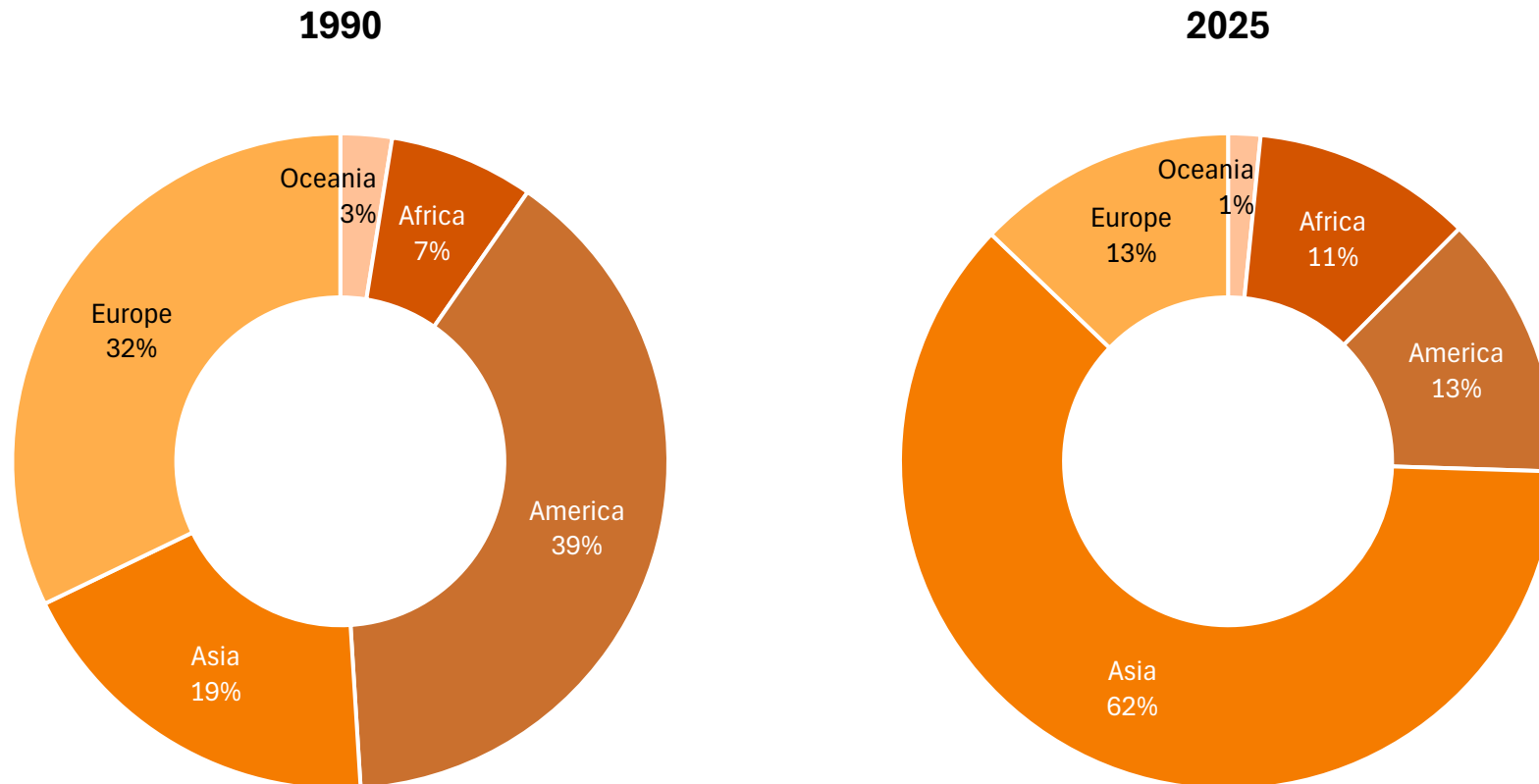
Million metric tonnes (Mt) of copper



Global refined copper production has risen almost sixfold, from around 5 Mt in 1960 to 28.7 Mt in 2025. Growth strengthened from the mid-1990s, initially supported by the rapid expansion of SX-EW and, increasingly from the 2000s, by strong growth in primary refining, particularly in China. SX-EW's share of global output rose from less than 1% in the 1960s to 18% in 2025. Primary refined production from concentrates reached 18.3 Mt (64%) in 2025, while secondary production totalled 5.3 Mt (19%). Together, secondary and SX-EW production now account for more than one-third of global refined output.

WORLD REFINED COPPER PRODUCTION BY REGION, 1990 vs. 2025

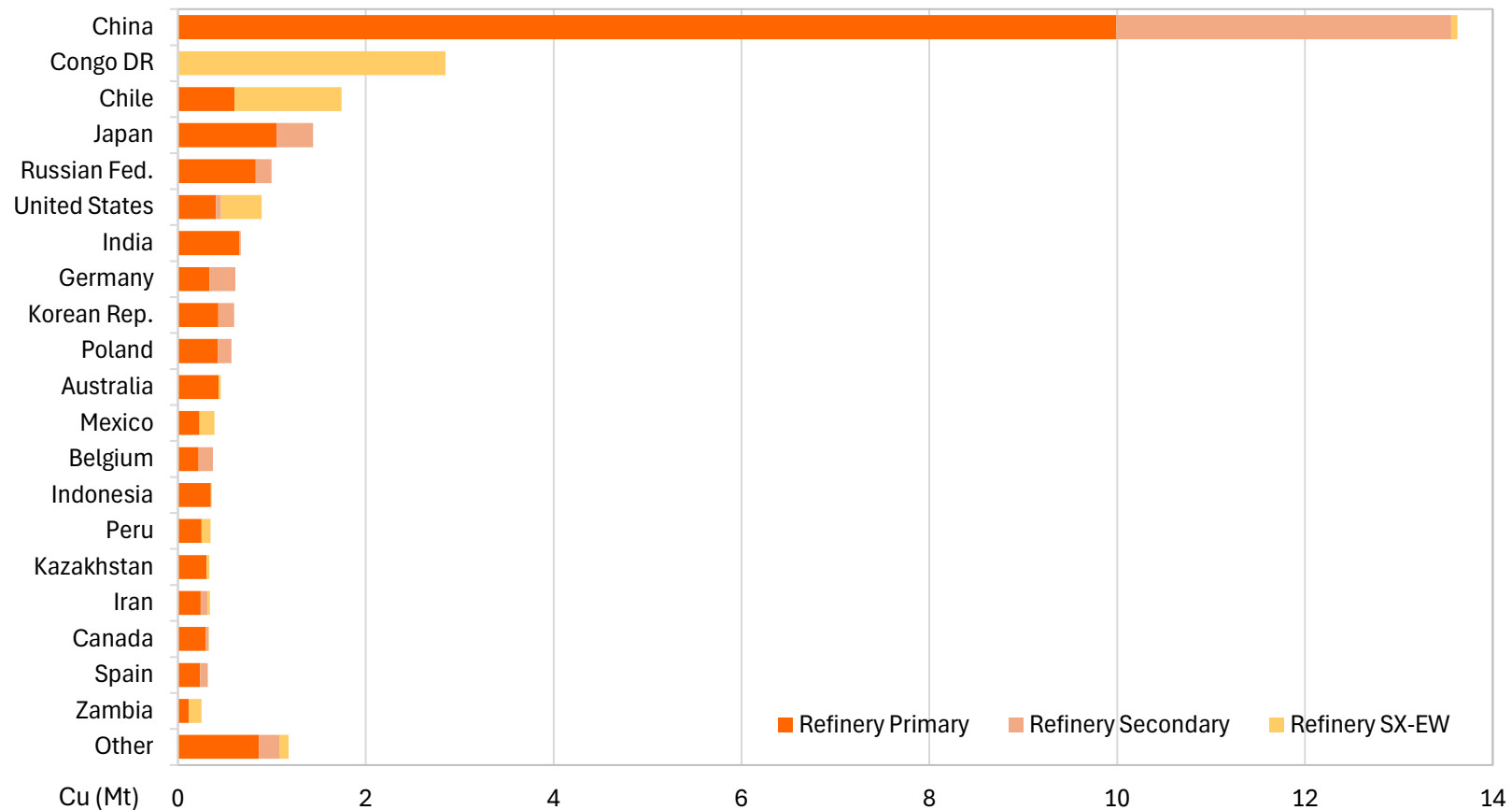
Percentage share (%)



The geographic distribution of refined copper production has shifted strongly towards Asia, whose share rose from 19% in 1990 to 62% in 2025, driven largely by the rapid expansion of refining capacity in China. Conversely, America's share fell from 39% to 13% reflecting declining production in recent years, while Europe's dropped from 32% to 13%, mainly due to faster growth elsewhere. Africa increased its share from 7% to 11%, supported by strong growth in SX-EW production, particularly in the DRC.

WORLD REFINED COPPER PRODUCTION BY COUNTRY, 2025

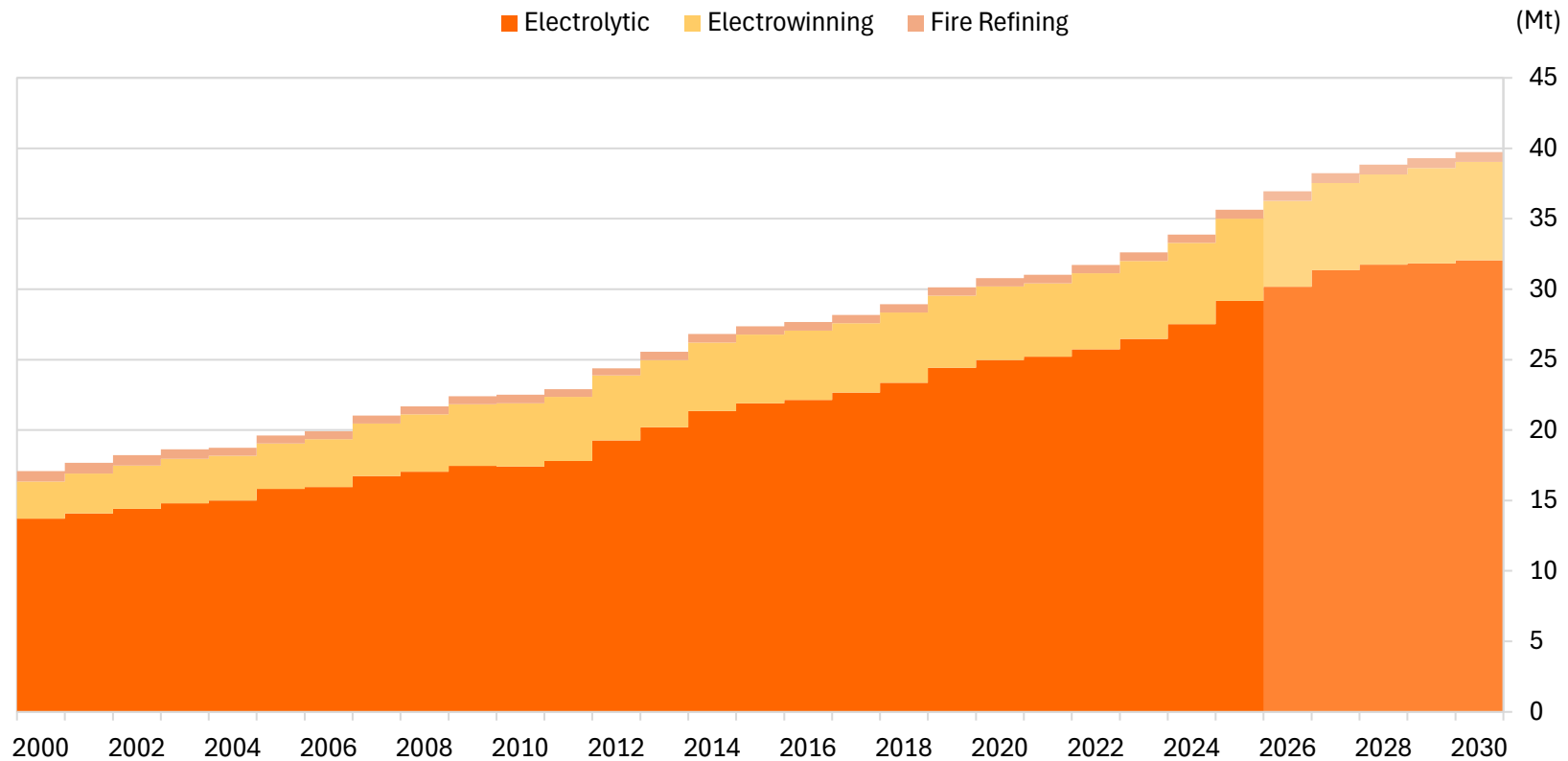
Million metric tonnes (Mt) of copper



China accounted for almost half of global refined copper production in 2025, producing 13.6 Mt, or 48% of the world total, with more than one-quarter coming from secondary refining. The DRC ranked second with 2.8 Mt (10%), produced entirely through SX-EW, reflecting the rapid expansion of its copper mining and hydrometallurgical industry. Chile followed with 1.7 Mt (6%), of which almost two-thirds was SX-EW, while Japan produced 1.4 Mt (5%), with almost three-quarters coming from primary refining.

WORLD COPPER REFINING CAPACITY TRENDS, 2000–2030

Million metric tonnes (Mt) of copper



Global copper refining capacity more than doubled from 17.1 Mt in 2000 to 35.6 Mt in 2025, with electrolytic refining accounting for 82% of the total. Capacity growth accelerated from mid-2023, led initially by China, with major additions in India and Indonesia following in 2024-2025. Looking ahead, global capacity is expected to increase by a further 4.2 Mt to 39.8 Mt by 2030, with electrolytic refining adding more capacity but electrowinning growing faster. The capacity utilisation rate, the ratio of production to capacity, stood at around 80% in 2025.

Note: Capacity data reflect production capability and should not be interpreted as actual or forecast production.

TOP 20 OPERATING COPPER REFINERIES BY CAPACITY, 2026

Thousand metric tonnes (kt) of copper

Refinery	Cap. (kt)	Process	Country	Operator / Owner(s)
1. Guixi (refinery)	1100	Electrolytic (3 tankhouses)	China	Jiangxi Copper Corporation
2. Jinchuan Gansu (refinery)	800	Electrolytic	China	Gansu state-owned Assets Inv. Group 47.97%, Gansu Government State-owned Assets Supervision and Admin. Commission 11.6%, The China Development Bank 13.53%, Other 26.9%
3. Shandong Fangyuan	700	Electrolytic	China	Dongying Development Zone Fangyuan nonferrous metal industry and Trade Co., Ltd 71.39%, Singapore Meijin jeweler 28.61%
4. Jinguan Tongling (I & II)	680	Electrolytic (400 & 280 kt)	China	Tongling Nonferrous Metals 100%
4. Onsan (I & II)	680	Electrolytic (440 & 240 kt)	Korean Rep.	LS MnM
6. Nanko Copper (refinery)	675	Electrolytic	China	Guangxi Nanko Copper Co.
7. Daye/ Hubei (refinery)	600	Electrolytic	China	China Non-ferrous Metals Mining Group Co. Ltd (57.99%); Hubei Province Changjiang Industry Inv. Group Co. Ltd. (38.56% shares); Hubei Jingchu Investment Development Co. Ltd (2.32%); Huangshi State Asset Management Co. Ltd and Yangxin County State Asset Management Co. Ltd (1.13%)
7. Yanggu C&D (refinery)	600	Electrolytic	China	Xiamen C&D 51%
9. Chuquicamata	500	Electrowinning: 50 kt; Electrolytic: 450 kt	Chile	Codelco
9. Tongling (new refinery)	500	Electrolytic	China	Tongling Nonferrous Metals 100%
9. Tenke Fungurume (SX-EW)	500	Electrowinning	DRC	CMOC Group 80%, La Générales des Carrières et des Mines (Gécamines) 20%
9. Adani (refinery)	500	Electrolytic	India	Adani Enterprises
9. Birla	500	Electrolytic	India	Birla Group (Hindalco)
14. Jinchuan (Fangchenggang refinery)	495	Electrolytic	China	Jinchuan Group 70%, Trafigura Pte Ltd. 20%, Trafigura Investment (China) Co., Ltd.10%
15. Manyar (refinery)	480	Electrolytic	Indonesia	PT-FI (Freeport-McMoRan Inc. 48.76%)
16. Heding Copper (refinery)	470	Electrolytic	China	Jiangxi Copper 40%, Fuye Group 40%, Xuancheng Quanxin Mining 15%, Hangzhou Fuyang Yuanhe Industrial 5%
17. Glogow (I & II)	468	Electrolytic (235 & 233 kt)	Poland	KGHM Polska Miedz, S.A. (KGHM)
18. Jinlong (Tongdu) (refinery)	460	Electrolytic	China	Tongling Nonferrous Metals 61.41%, Sumitomo Metal Mining Co. Ltd. 27.07%, Sumitomo Corporation 7.86%, Pingguo Aluminium Company 3.67%.
18. Toyo (refinery)	460	Electrolytic	Japan	Sumitomo Metal Mining Co. Ltd.
18. Pyshma Refinery	460	Electrolytic	Russian Fed.	Uralelectromed (Urals Mining & Metallurgical Co. - UMMC)

Note: Tied operations are included, so the table may contain more than 20 entries. Capacity data reflect production capability and should not be interpreted as actual or forecast production.

4. ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) IN MINING

WHAT IS ESG?

Environmental, Social and Governance (ESG) refers to a framework for considering environmental, social and governance factors in corporate strategy, operations and investment decisions. In mining, these factors can affect projects throughout the mine life cycle, from exploration and development through production, closure and rehabilitation.

The environmental dimension includes land and water use, emissions, waste, biodiversity and climate-related risks. The social dimension covers workforce health and safety, human rights, community relations and local economic benefits. These factors can also shape a mining operation's Social Licence to Operate (SLO), broadly understood as the level of acceptance and trust it develops among affected communities and other stakeholders. Governance includes corporate oversight, transparency, ethical conduct, regulatory compliance and accountability.^{1/}



Figure 10. Freeport-McMoRan Safford Copper Mine in Arizona

WHY IS ESG IMPORTANT?

Mining can generate substantial economic benefits, but its activities can also have significant environmental and social impacts. ESG provides a framework for identifying and managing these issues throughout the mine life cycle. Environmental and social factors can affect access to land and water, permitting, project schedules, community relationships, operating continuity and closure obligations.

ESG information is also used by investors and lenders to assess material risks. Ratings and disclosures can support these assessments, although methodologies differ between providers. Research on mining companies indicates that ESG-rated firms tend to be larger, while the relationship between ESG ratings and profitability or cost of debt remains unclear.^{2/}

Mining companies integrate ESG considerations because:

- Operationally, environmental and social issues can translate into project delays, additional costs or disruptions, while community relationships can influence a project's social licence.
- From an investment perspective, ESG information can help investors and lenders assess risks not fully captured by conventional financial measures and reduce information gaps.

1/ Maybee, B., Lilford, E. & Hitch, M. (2023), *Environmental, Social and Governance (ESG) risk, uncertainty, and the mining life cycle*, *The Extractive Industries and Society*, 14, 101244.

2/ Fikru, M.G., Brodmann, J., Eng, L.L. & Grant, J.A. (2024), *ESG ratings in the mining industry: Factors and implications*, *The Extractive Industries and Society*, 20, 101521

5. COPPER TRADE

Copper is traded internationally at virtually every stage of the value chain. Countries with smelting and refining capacity exceeding their domestic mine supply, for example, typically rely on imported concentrates and other feed materials, while major mining countries with insufficient domestic processing capacity export part of their production.

The principal copper products traded internationally include copper ores and concentrates, copper blister and anodes, copper cathodes, copper ingots, copper waste and scrap, and copper semi-manufactured products (semis).

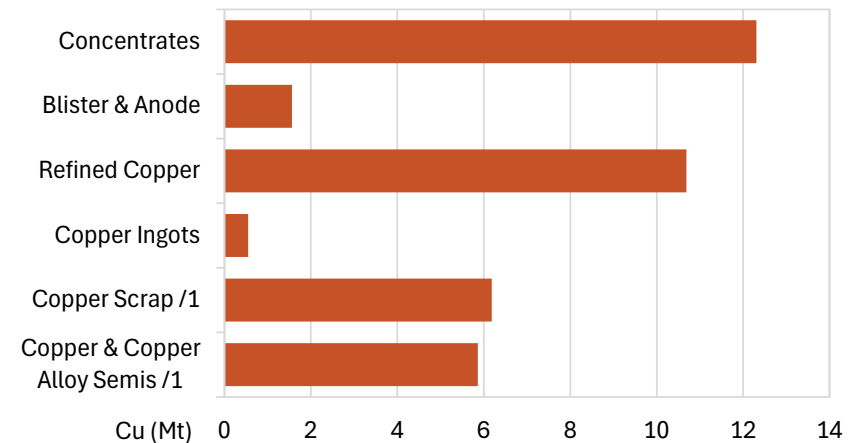
Copper powders and compounds are also traded globally, but typically in much smaller quantities. Copper is also contained in end-use products traded globally, including electrical and electronic equipment, machinery, vehicles and appliances.

Government policies can significantly affect copper trade. Tariffs, export restrictions, licensing requirements, waste-shipment regulations, sanctions and other measures can redirect trade flows, affect regional availability and influence investment across the copper value chain. Growing concern over security of supply and access to critical raw materials has increased the use of such measures in recent years.

For more information about the international trade of copper and changes in regulations that can affect the trade of copper, please contact the ICSG Secretariat at mail@icsg.org.

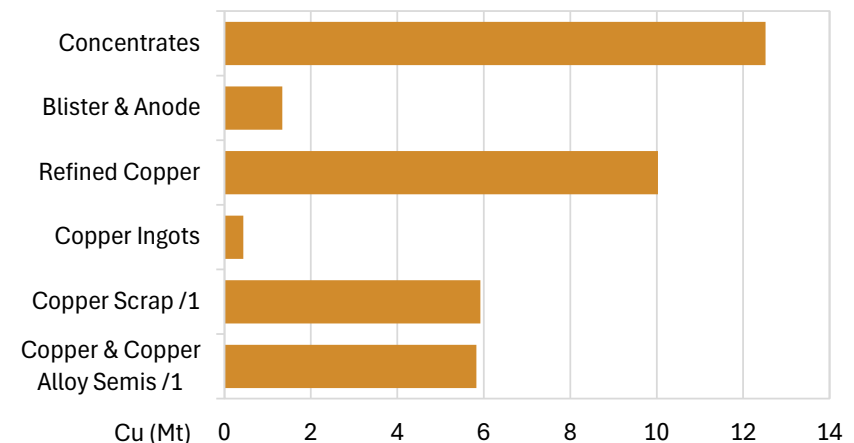
GLOBAL COPPER EXPORTS BY PRODUCT CATEGORY, 2025

Million metric tonnes of copper (unless otherwise noted)



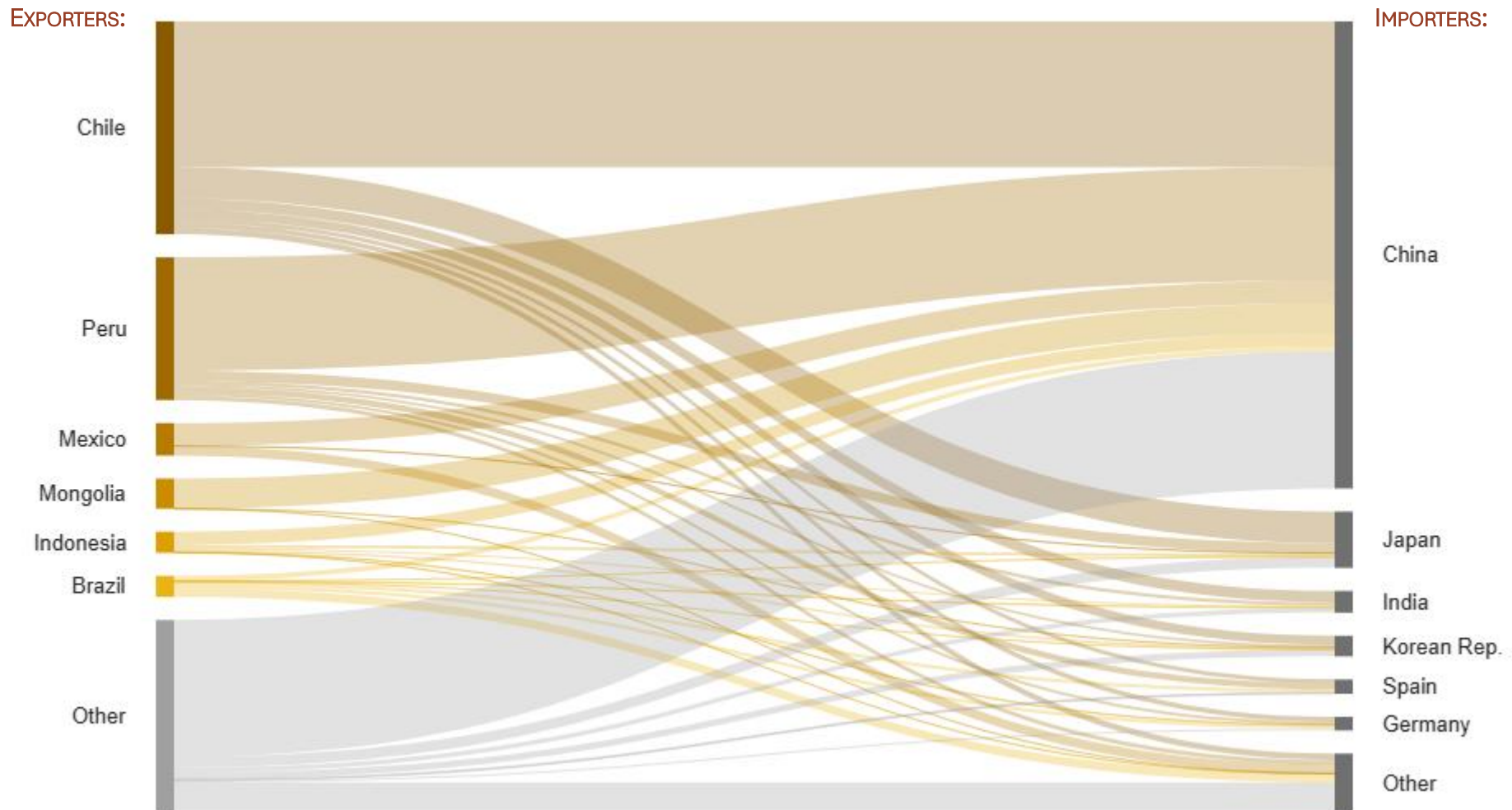
GLOBAL COPPER IMPORTS BY PRODUCT CATEGORY, 2025

Million metric tonnes of copper (unless otherwise noted)



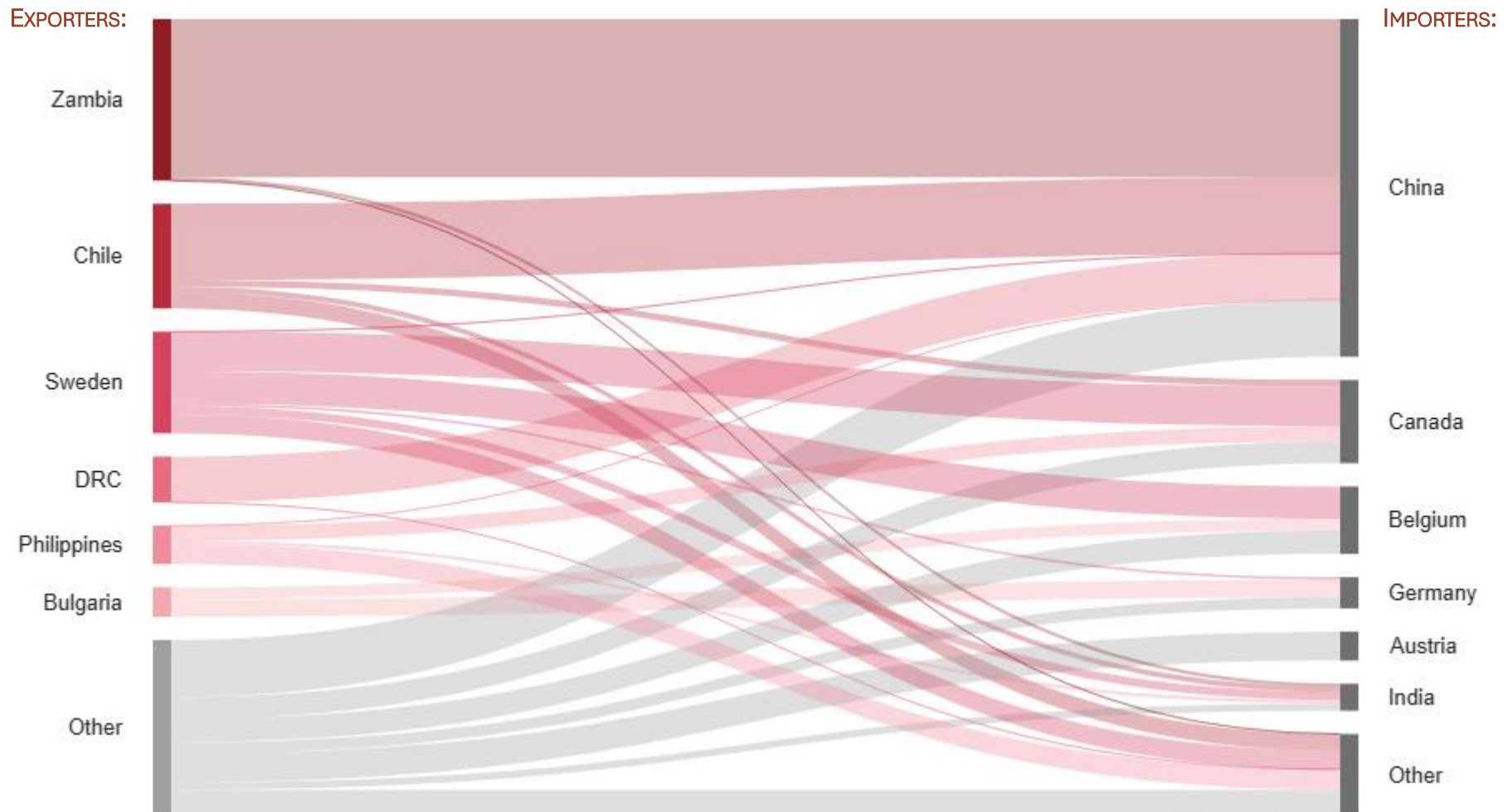
Note: Exports and Imports might not match due to transit time, under-reporting, or product misclassification. 1/ Gross weight.

INTERNATIONAL TRADE FLOWS OF COPPER ORES AND CONCENTRATES, 2025



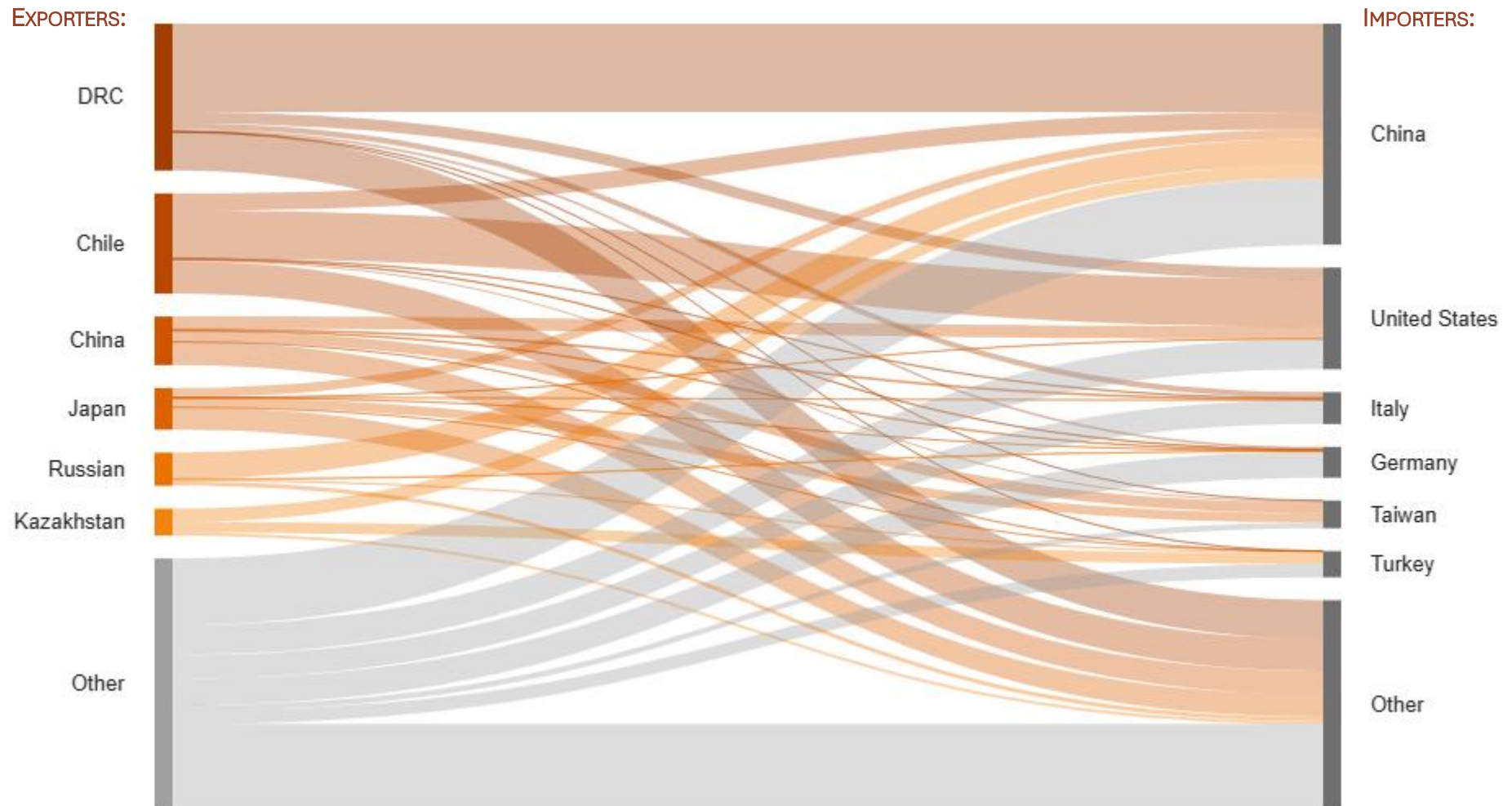
Global trade flows of copper ores and concentrates by exporting and importing countries. Detailed trade data available in ICSG Statistical Yearbook

INTERNATIONAL TRADE FLOWS OF COPPER BLISTER AND ANODES, 2025



Global trade flows of copper blister and anodes by exporting and importing countries. Detailed trade data available in ICSG Statistical Yearbook

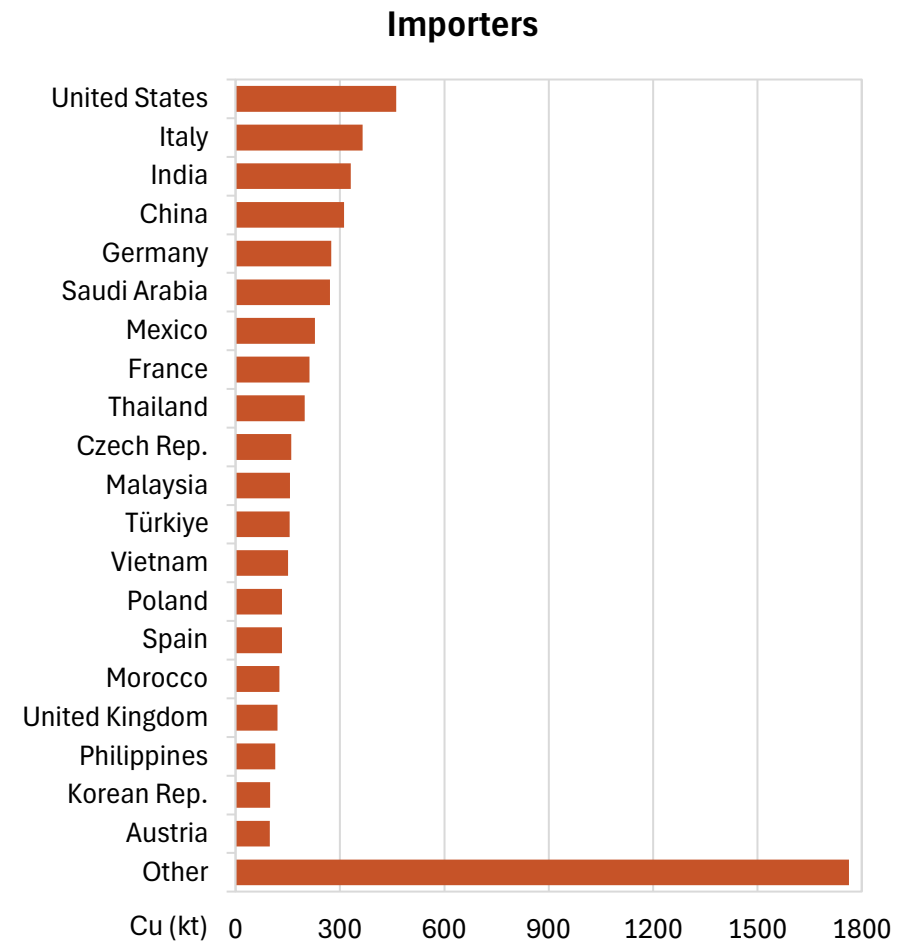
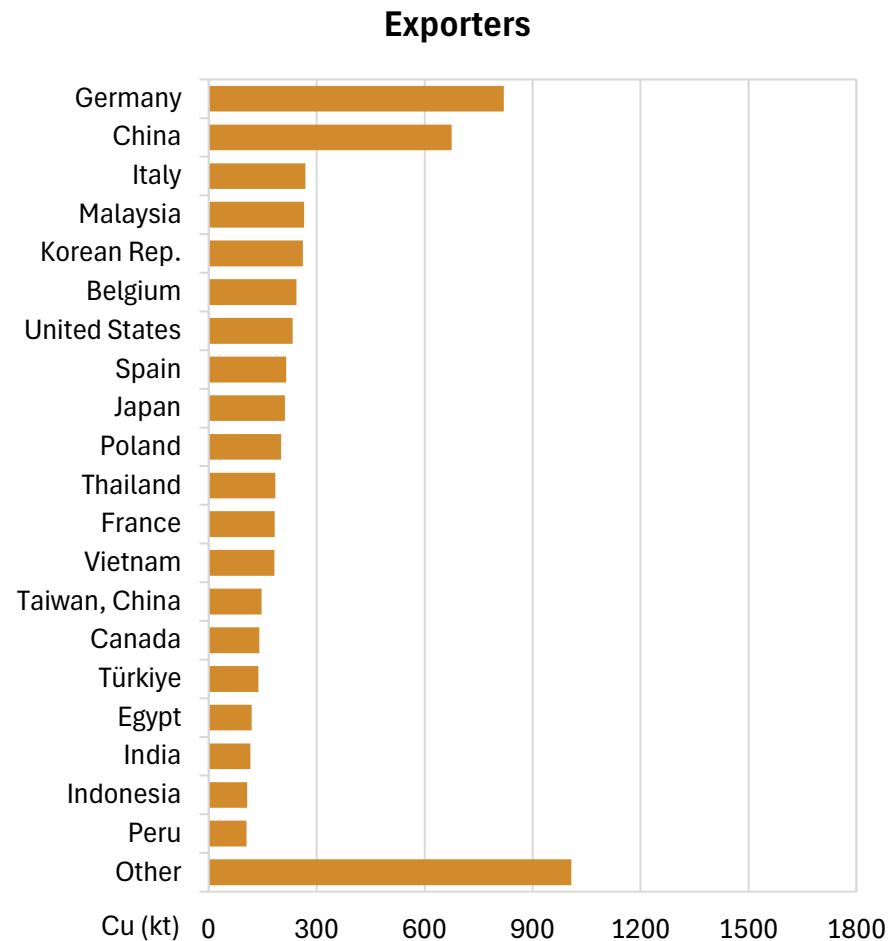
INTERNATIONAL TRADE FLOWS OF REFINED COPPER, 2025



Global trade flows of refined copper by exporting and importing countries. Detailed trade data available in ICSG Statistical Yearbook

WORLD COPPER SEMIS TRADE BY COUNTRY, 2025

Thousand metric tonnes (kt), gross weight



6. COPPER AS A COMMODITY: EXCHANGES, PRICES AND STOCKS

Copper is traded between producers, consumers, merchants and other market participants. An important element in these transactions is the reference price used to settle physical purchases and sales, either for prompt delivery or at a future date.

The principal exchanges that provide copper futures trading and establish reference prices are the London Metal Exchange (LME), the Commodity Exchange (COMEX), part of CME Group, and the Shanghai Futures Exchange (SHFE).

The standard LME copper contract is for 25 tonnes and is quoted in US dollars per tonne. COMEX trades 25,000-pound contracts quoted in US cents per pound, while SHFE contracts are for 5 tonnes and quoted in Renminbi per tonne. Smaller-sized contracts are also available on some exchanges.

Trading on these exchanges provides transparent reference prices reflecting expectations about copper supply, demand and broader market conditions. The LME Official Settlement Price is particularly important as a global reference for physical copper transactions.

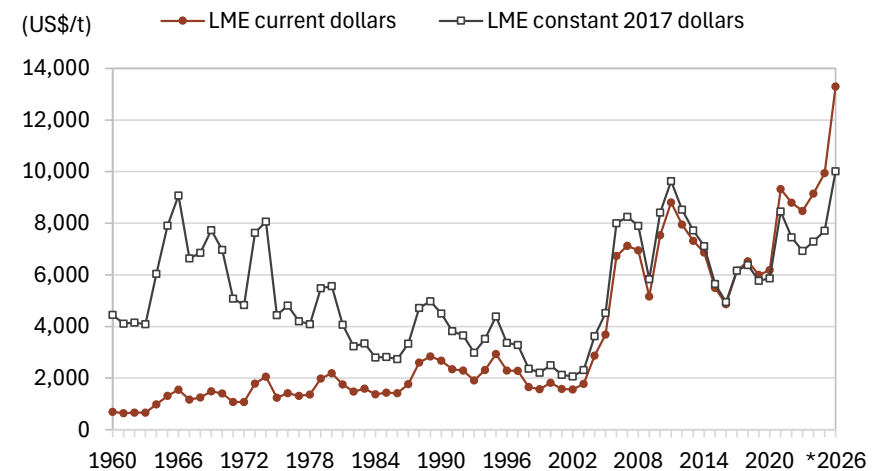
Exchanges also provide futures and options contracts that allow producers, consumers and traders to manage their exposure to changes in copper prices. Financial investors and participants provide additional liquidity and facilitate the transfer of price risk. Futures prices for different delivery dates form a forward curve. When future prices are above nearby prices, the market is

described as being in contango, while the reverse situation is known as backwardation.

The exchanges operate systems of approved warehouses where qualifying copper can be delivered against physical contracts. Exchange rules specify the quality, brands, lot sizes, delivery locations and other requirements for copper eligible for delivery.

Exchange warehouse stocks are closely monitored as indicators of the availability of refined copper. However, they represent only part of global copper inventories, as producers, consumers, traders, and other market participants also hold substantial quantities outside exchange warehouse systems.

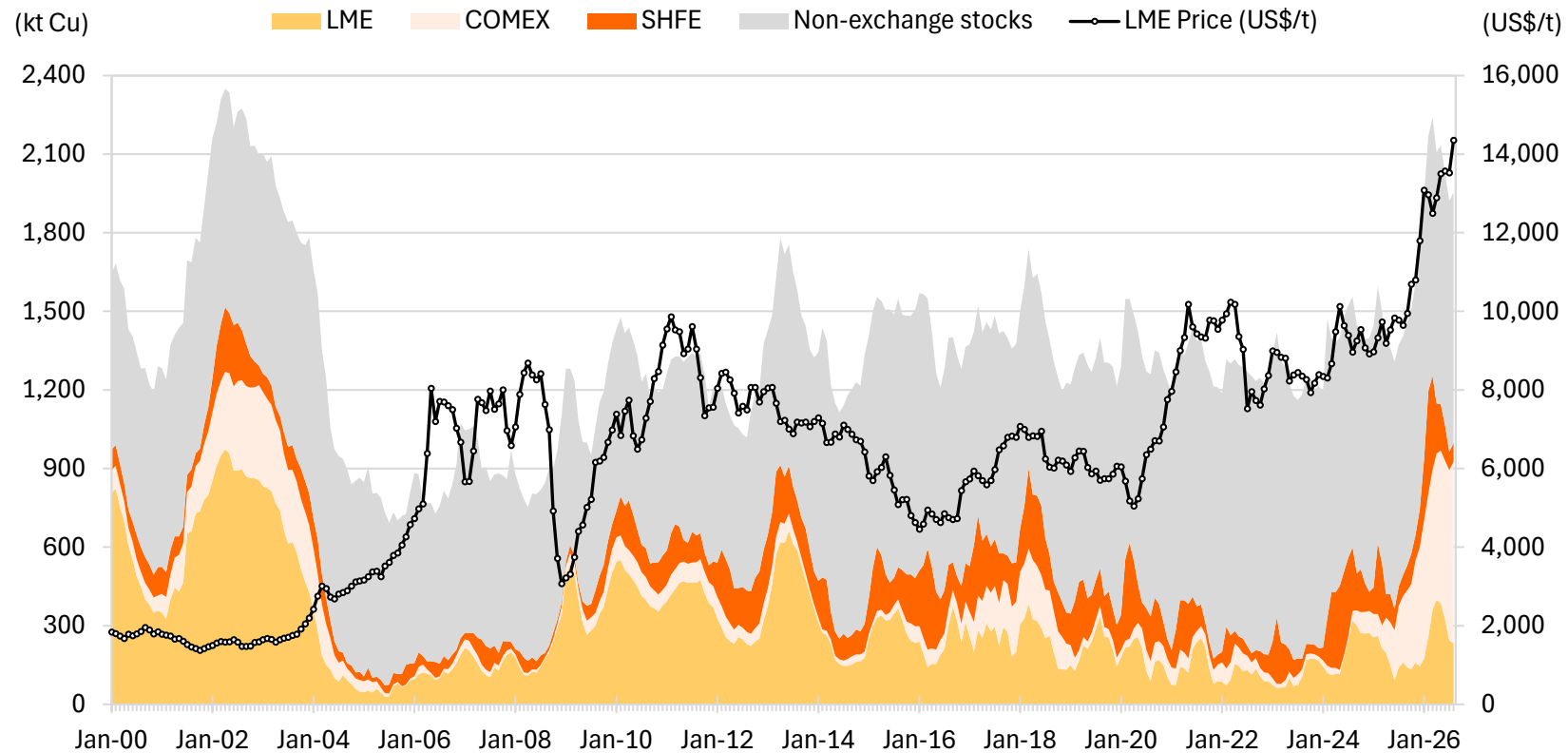
ANNUAL AVERAGE LME COPPER OFFICIAL PRICE, 1960-2026*
US dollars per tonne (US\$/t)



* Note: 2026 Jan-Aug average

COPPER STOCKS AND PRICES, JAN 2000–AUG 2026

Stocks in thousand metric tonnes (kt), price in US dollars per tonne (US\$/t)



Total stocks have risen sharply since 2025, largely because expectations of US copper tariffs and regional price premiums redirected large volumes of cathode into COMEX warehouses. As a result, much of the visible stocks are concentrated in the US, while available metal on the LME and in other regions has tightened. By August 2026, LME copper official price had risen to record levels, averaging US\$14,353.40/t during the month, approximately 15% above the end-2025 level.

Note: Stock figures represent end-of-month levels; LME prices represent monthly averages.

7. COPPER USE AND THE SEMIS INDUSTRY

HOW IS COPPER USED?

Refined copper is primarily shipped to fabricators in the form of cathode, wire rod, billet, cake (slab), or ingot. These materials are then processed through various methods such as extrusion, drawing, rolling, forging, melting, electrolysis, or atomization to create wire, rod, tube, sheet, plate, strip, castings, powder, and other shapes, known as semis. Companies carrying out this initial transformation are referred to as **first users of copper**, or semi-fabricators.

First users of copper use both refined copper and copper scrap as raw materials. High-quality scrap can be melted directly to produce copper and copper-alloy semis without first undergoing smelting and refining and is therefore known as **direct-melt scrap**. Consequently, total copper use in fabrication is broader than refined copper usage alone.

Copper and copper-alloy semis are subsequently transformed by downstream industries into components and finished products used in building construction, power and telecommunications infrastructure, vehicles, industrial equipment, appliances, electronics and many other applications.

This section presents information on refined copper usage, total copper usage, first uses and major end-use sectors.



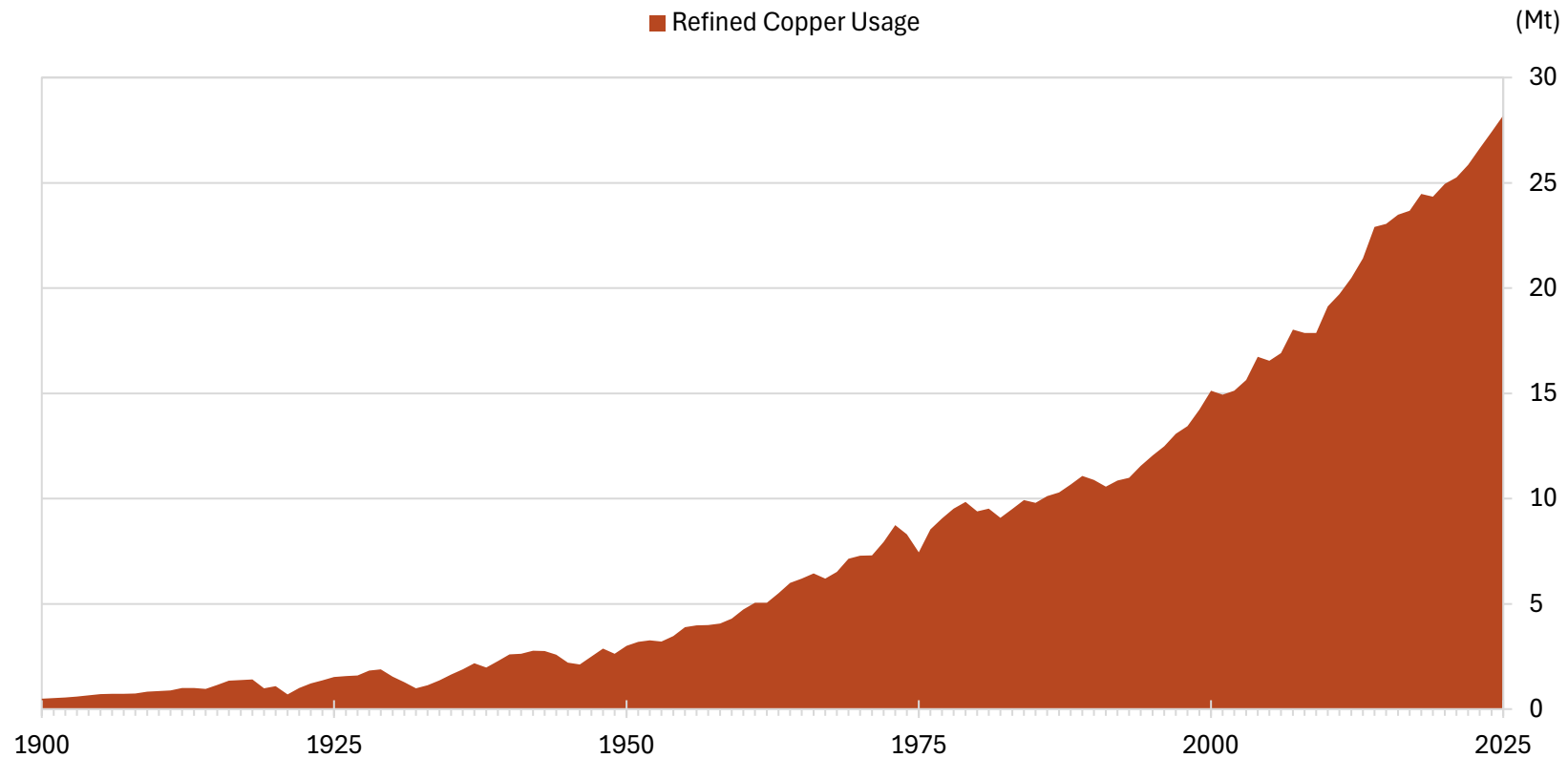
Figure 11. Copper tube; source: IWCC



Figure 12. Copper wire drawing process; source: KGHM Polska Miedź

WORLD REFINED COPPER USAGE, 1900–2025

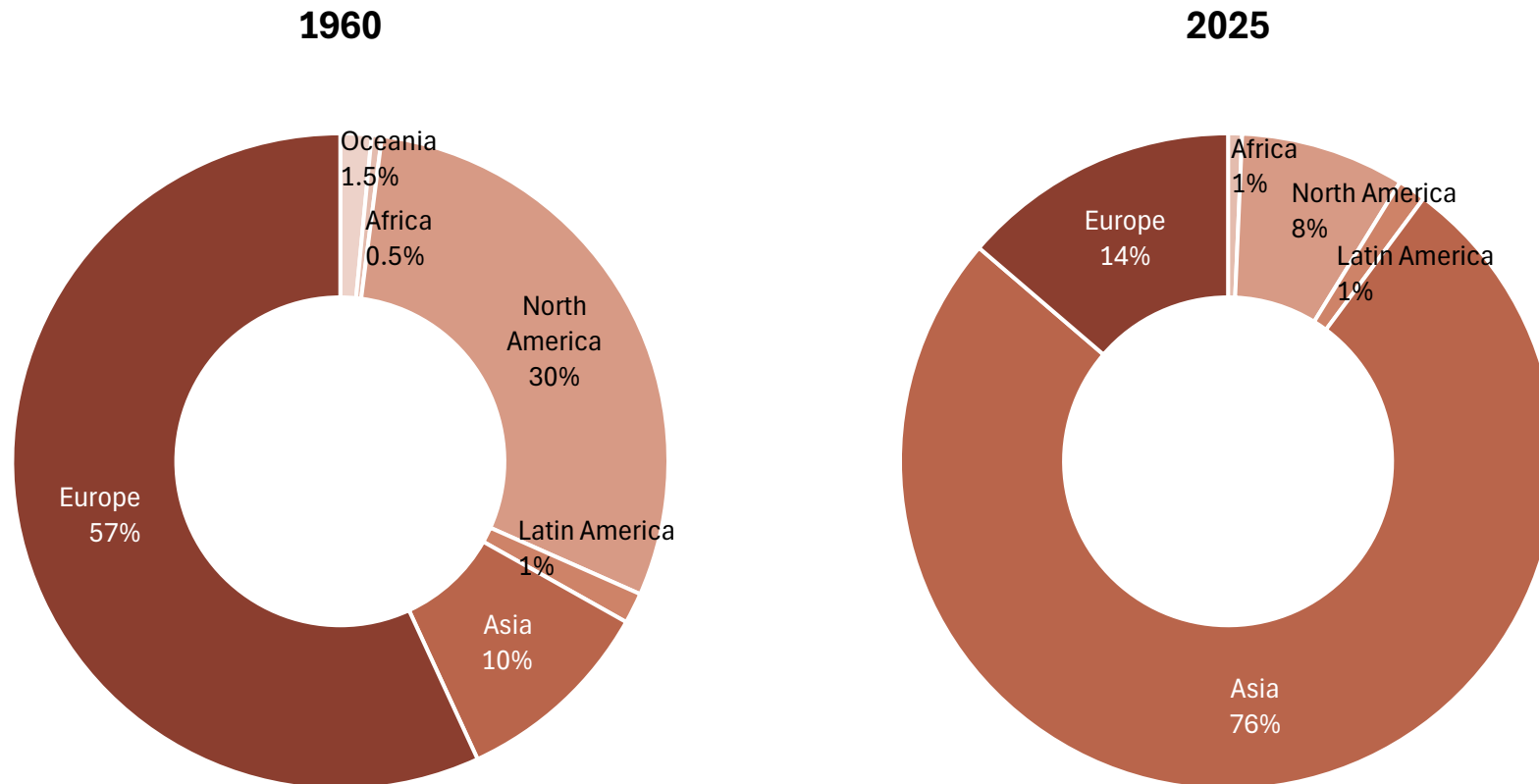
Million metric tonnes (Mt) of copper



Since 1900, global apparent usage for refined copper has increased from less than 500 thousand tonnes to 28.2 million tonnes in 2025, reflecting a compound annual growth rate of 3.3%. Growth accelerated from the mid-1990s, driven by rapid industrialisation, urbanisation and infrastructure development in China and other emerging economies. More recently, electrification, renewable energy, grid expansion, electric vehicles and digital infrastructure have become increasingly important drivers of copper demand.

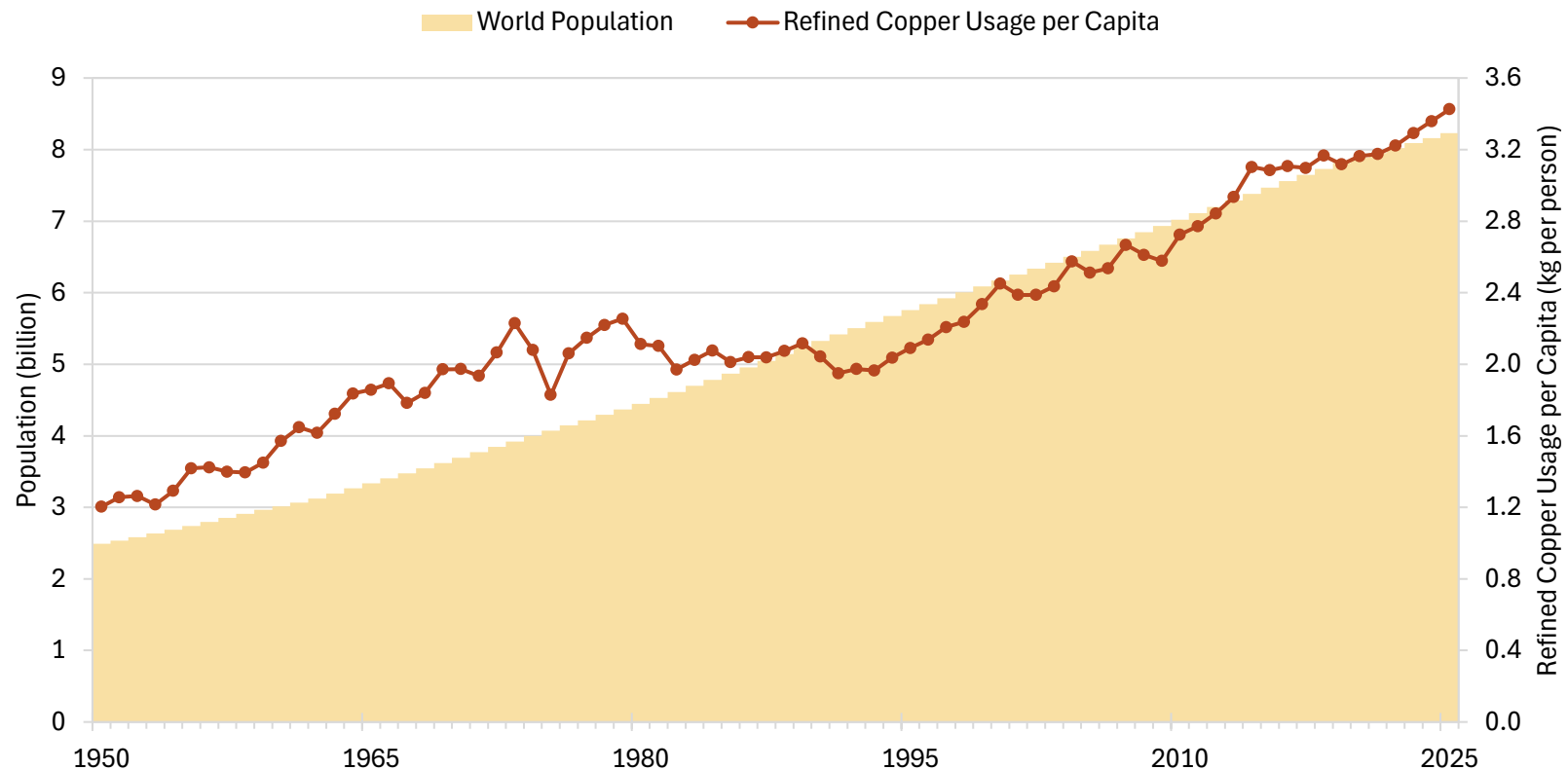
WORLD REFINED COPPER USAGE BY REGION, 1960 vs. 2025

Percentage share (%)



Asia's share of refined copper usage has increased dramatically from just 10% in 1960 to a commanding 76% in 2025, while the combined share of Europe and North America fell from 87% to 22%. This shift reflects Asia's rapid industrialisation and urbanisation, together with the expansion of its copper semis manufacturing industry, particularly in China, which has become the primary driver of world copper demand.

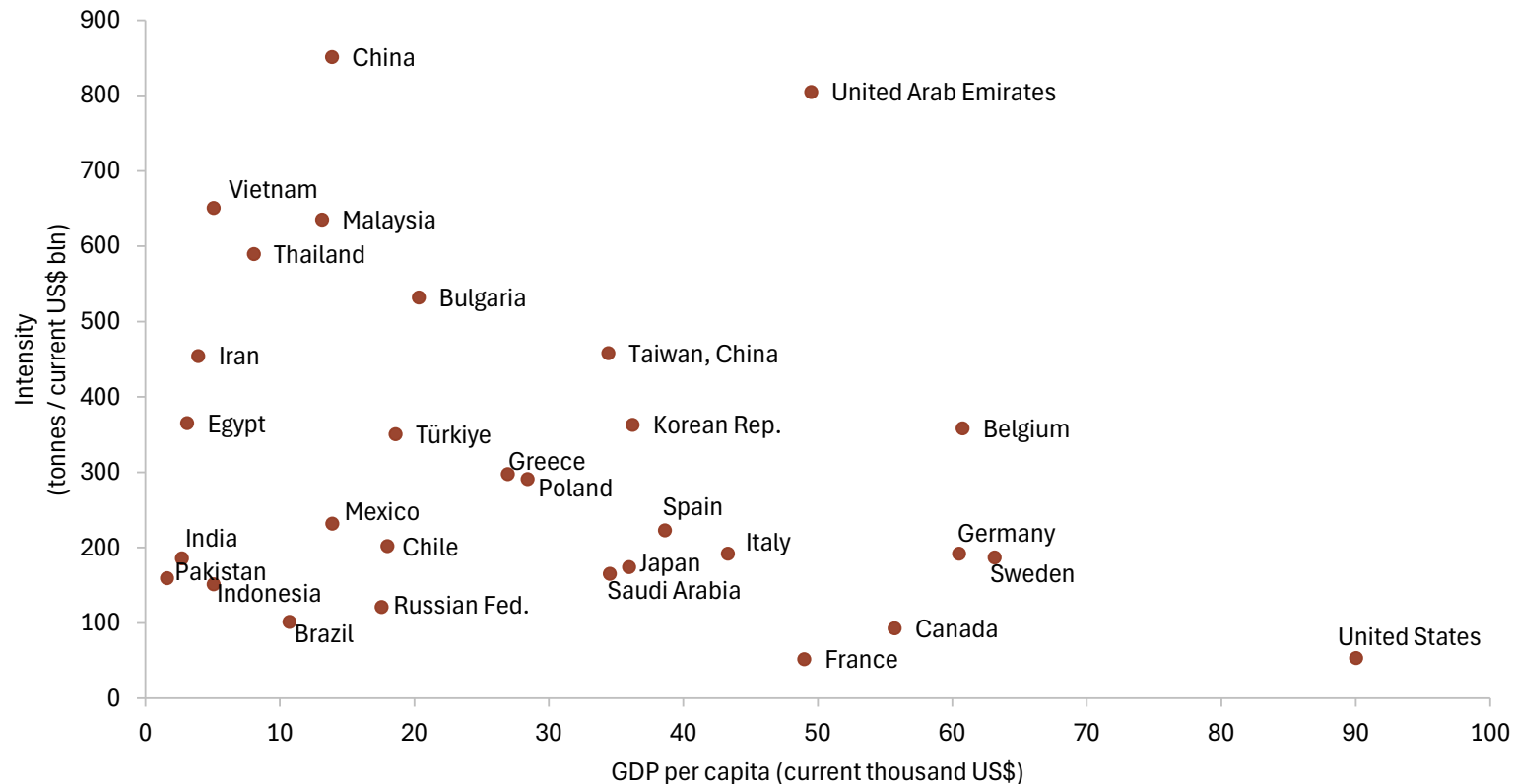
WORLD REFINED COPPER USAGE PER CAPITA, 1950–2025



World refined copper usage per capita increased from around 1.2 kg in 1950 to 3.4 kg in 2025, indicating that growth in refined copper usage has substantially outpaced population growth. This reflects the increasing intensity of copper use associated with economic development, industrialisation and electrification. Per capita usage represents refined copper used by the semis industry divided by population and should not be interpreted as the amount of copper contained in finished products consumed by each person.

INTENSITY OF REFINED COPPER USAGE, 2025

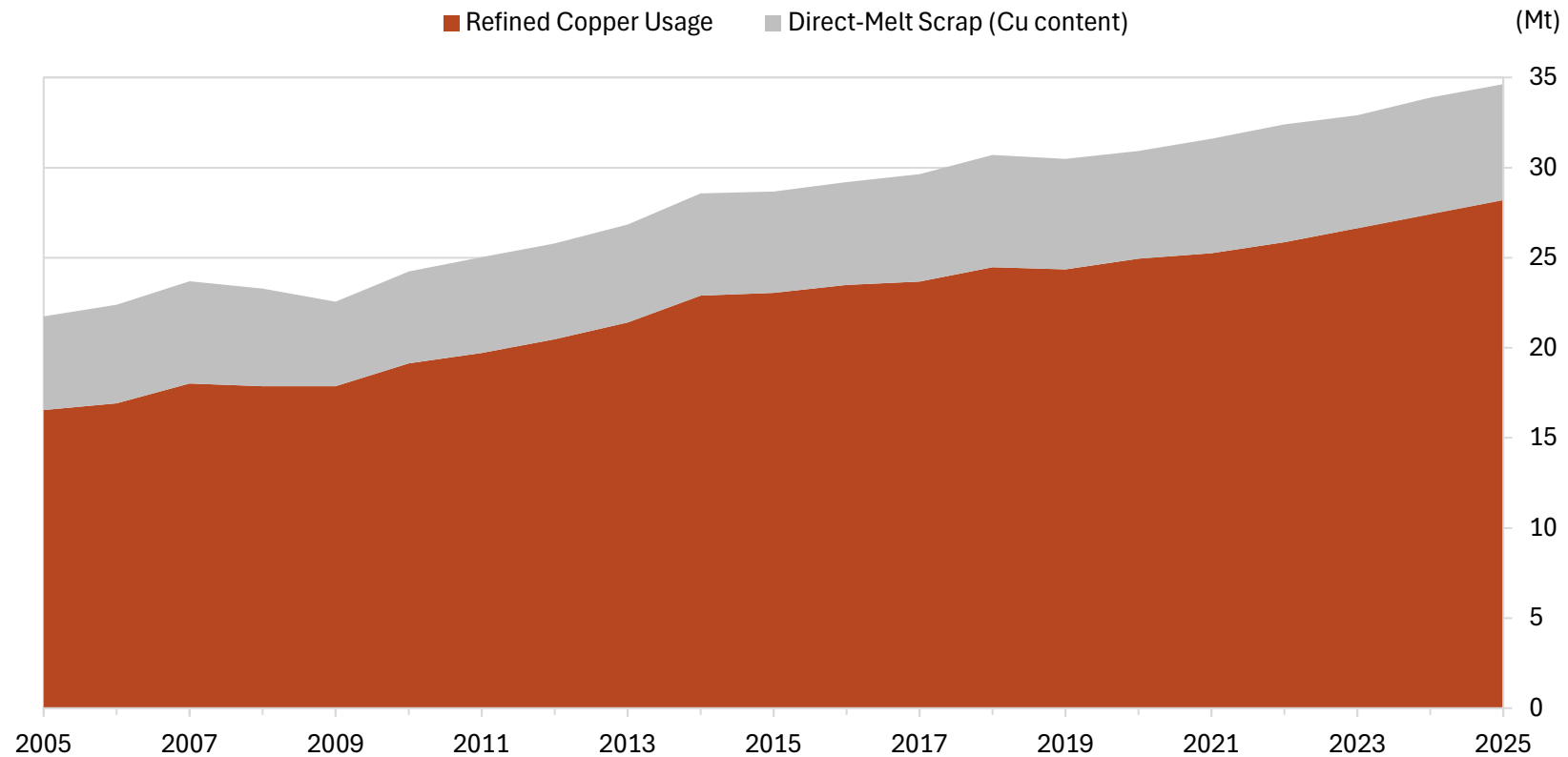
Refined copper usage to GDP ratio (tonnes/current US\$ bln)



Intensity of Refined Copper Usage, defined as the amount of refined copper used per unit of GDP, provides an indication of how copper-intensive an economy is. China records the highest intensity globally, followed by the United Arab Emirates, Vietnam and Malaysia, reflecting the importance of copper semi-fabrication and other copper-intensive manufacturing activities in these economies. In contrast, several high-income economies, including the United States and France, have relatively low intensity. As refined copper usage is measured at the first-use stage, differences in intensity also reflect the geographical location and structure of the semis industry.

WORLD TOTAL COPPER USE, 2005–2025

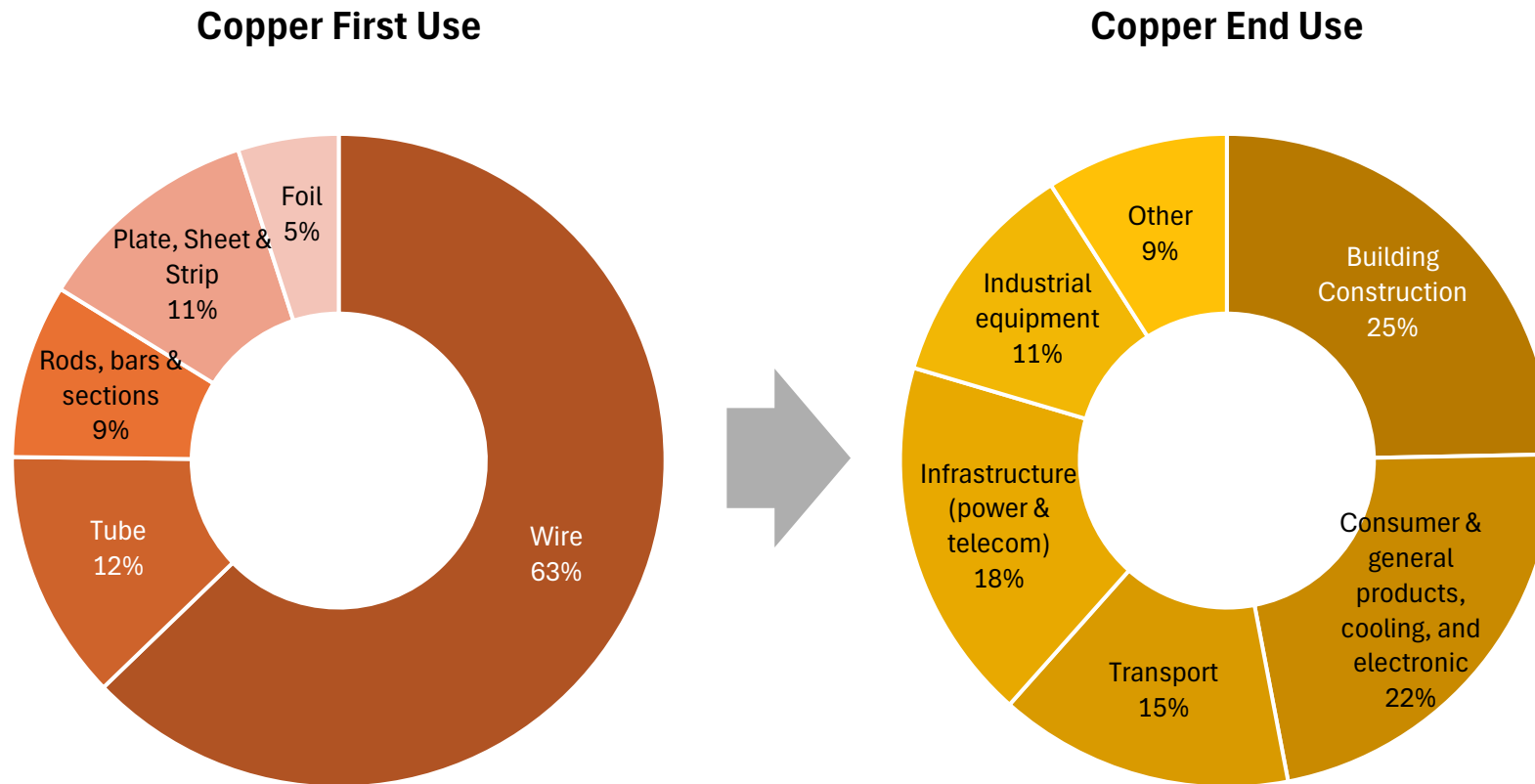
Million metric tonnes (Mt) of copper



World total copper usage, comprising refined copper and scrap directly melted by semi-fabricators, increased from 21.7 Mt in 2005 to 34.6 Mt in 2025. Direct-melt scrap, which currently contributes almost one-fifth of total usage, is sufficiently high-quality to be used directly in the production of semis without first undergoing smelting and refining. It should not be confused with scrap that undergoes these processes and is therefore already included in refined copper.

GLOBAL COPPER FIRST USE AND END USE, 2025

Percentage share (%). Source: International Wrought Copper Council (IWCC)



First use refers to the transformation of copper into semi-fabricated products (semis), such as wire, tube, sheet, strip, foil, rods and bars. These products are subsequently processed into finished goods for a wide range of end-use sectors, including construction, infrastructure, transport, industrial equipment and consumer products.

MAJOR USES OF COPPER

ELECTRICAL

Copper has the highest electrical conductivity of any non-precious metal and is the international reference standard against which other electrical conductors are measured. Combined with its strength, ductility, reliability and resistance to corrosion and creep, this makes copper one of the most widely used materials in electrical applications.

Copper is extensively used in insulated and uninsulated power cables for high-, medium- and low-voltage applications and is the preferred conductor for many residential, commercial and industrial wiring systems. It is also an essential component of generators, motors, transformers, substations, switchgear, busbars and other electrical and grid equipment.

The expansion and modernisation of power grids is becoming an increasingly important driver of copper usage. Growing electricity demand, renewable energy integration, electrification, and the expansion of data centres are driving investment in transmission and distribution networks and grid reinforcement. The energy transition therefore creates copper demand not only in renewable energy systems, electric vehicles and energy storage, but also in the electrical infrastructure required to connect them.

The scale of this transformation is substantial. The International Energy Agency (IEA) estimates that around 80 million km of electricity grids will need to be added or replaced worldwide by 2040, roughly equivalent to the entire global grid existing today.



Figure 13. High-voltage electrical substation

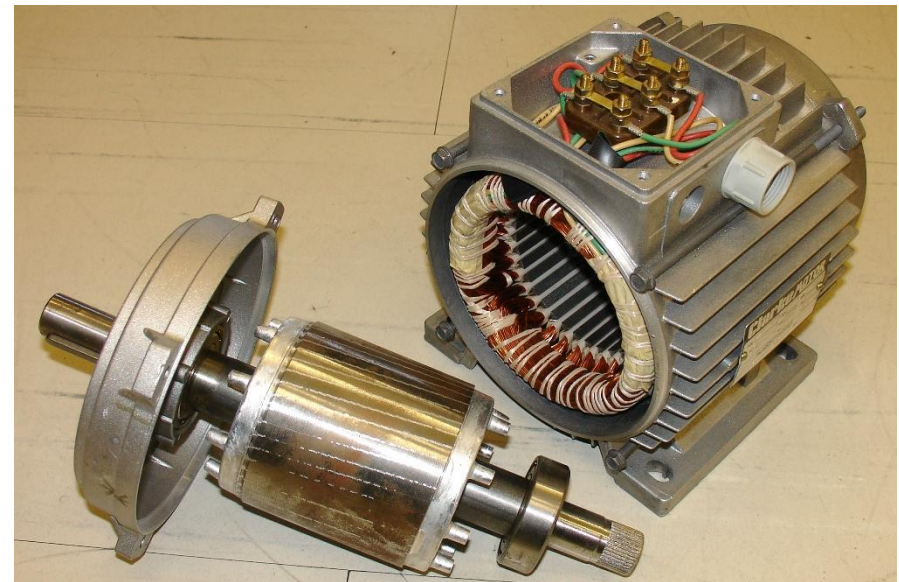


Figure 14. Stator and rotor of a three-phase induction motor

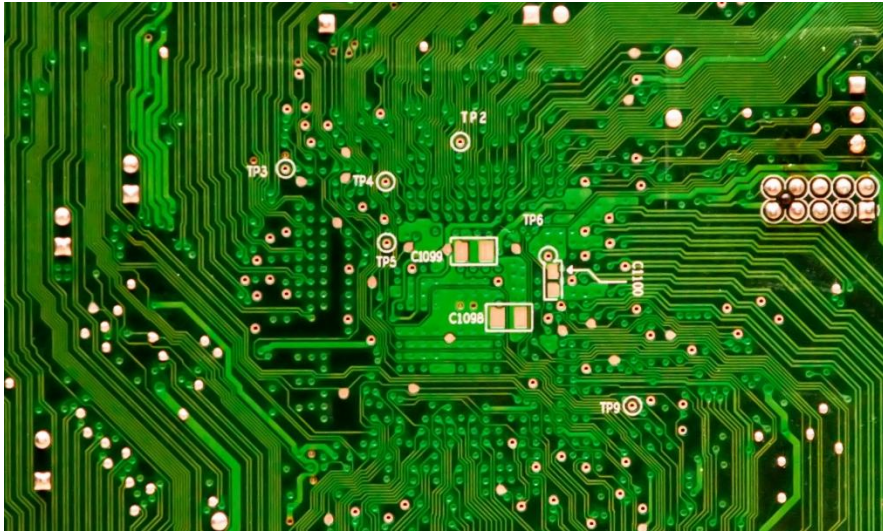


Figure 15. A close-up of a computer's motherboard

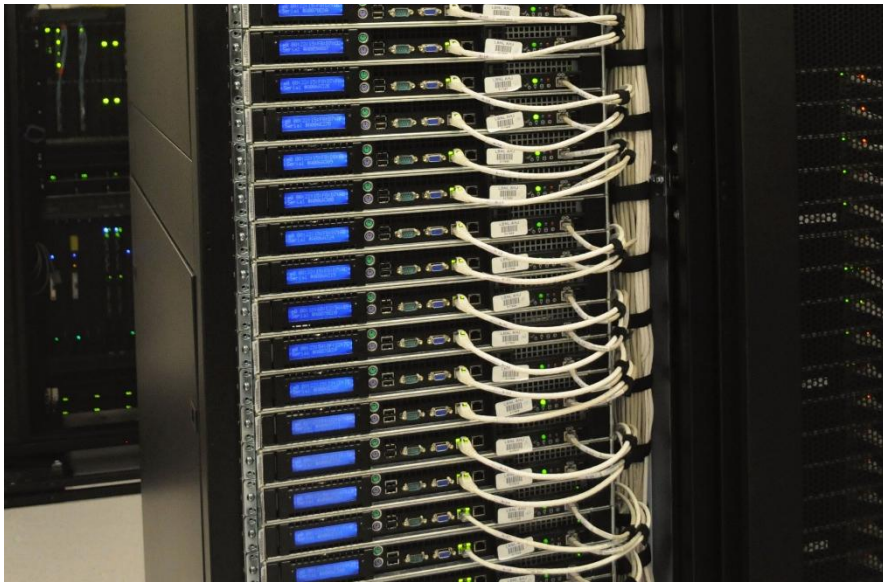


Figure 16. Rear of rack at NERSC data centre

ELECTRONICS AND COMMUNICATIONS

Copper plays an important role in modern information and communications technologies. Copper and copper-alloy products are widely used in electronic equipment, telecommunications systems and computers, including in wiring, printed circuit boards, connectors, switches and power supplies.

Copper is also extensively used in semiconductor devices. Copper interconnects are an established technology in integrated circuits, where their high electrical conductivity enables the efficient transmission of electrical signals; advanced chips can contain more than 100 km of copper interconnect wiring. Copper's high thermal conductivity is also valuable for managing heat generated by electronic equipment.

The rapid expansion of digital infrastructure, particularly data centres and artificial intelligence, is creating new opportunities for copper usage. In addition to its use in servers and electronic equipment, copper is required in cabling, connectors and cooling systems within data centres.

The growing deployment of AI and other computing-intensive technologies is also increasing electricity requirements, driving investment in the power and grid infrastructure needed to support the expansion of data centres.

The International Energy Agency (IEA) expects global data-centre electricity consumption to roughly double from 485 TWh in 2025 to 950 TWh by 2030, with AI-focused data centres growing particularly rapidly.

BUILDING AND CONSTRUCTION

Copper and copper alloys are widely used in buildings for electrical wiring, plumbing, heating and cooling systems, taps, valves and fittings. Thanks in part to their durability and aesthetic characteristics, copper and alloys such as brass and architectural bronze are also used in façades, roofs, canopies, doors and window frames.

Copper tube is non-combustible and does not emit toxic fumes when exposed to fire. Its durability and corrosion resistance make it suitable for water distribution, heating and fire-sprinkler systems.

Copper and certain copper alloys also possess antimicrobial properties that can help reduce microbial contamination, both in water systems and on frequently touched surfaces such as door handles and plates.

Copper roofing and rainwater systems are valued for their long service life and resistance to weathering. When exposed to the atmosphere, copper gradually develops a protective patina that contributes to its characteristic appearance and long-term corrosion resistance.

The growing electrification of buildings is also increasing the importance of copper in electrical distribution, heat pumps, air-conditioning systems, renewable energy installations and electric-vehicle charging infrastructure.



Figure 17. Copper roofing and rainwater system

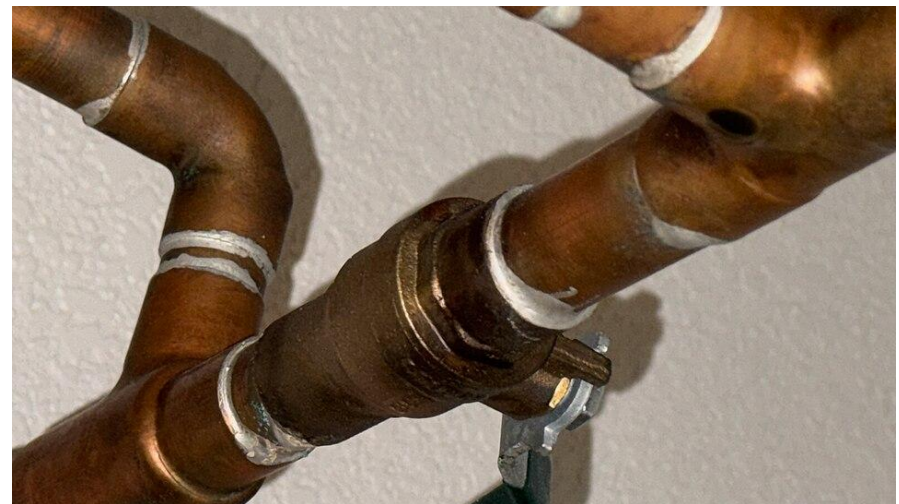


Figure 18. Copper water pipes



Figure 19. Large copper-based alloy ship propeller

INDUSTRIAL MACHINERY AND EQUIPMENT

Copper and copper alloys are widely used in industrial machinery and equipment because of their electrical and thermal conductivity, durability, machinability, corrosion resistance and ability to be manufactured to precise tolerances. Applications include motors and generators, bearings, bushings, gears, valves, pumps and other industrial components.

Copper's high thermal conductivity makes it particularly suitable for heat exchangers, condensers, refrigeration and air-conditioning equipment and industrial cooling systems.

The corrosion resistance of copper alloys, including brass, bronze and copper-nickel alloys, also makes them suitable for use in marine and other demanding environments. Applications include vessels, tanks and piping exposed to seawater, propellers and equipment used in ships, offshore platforms and coastal power stations, where the corrosion resistance of copper alloys contributes to long service life and reliable operation.

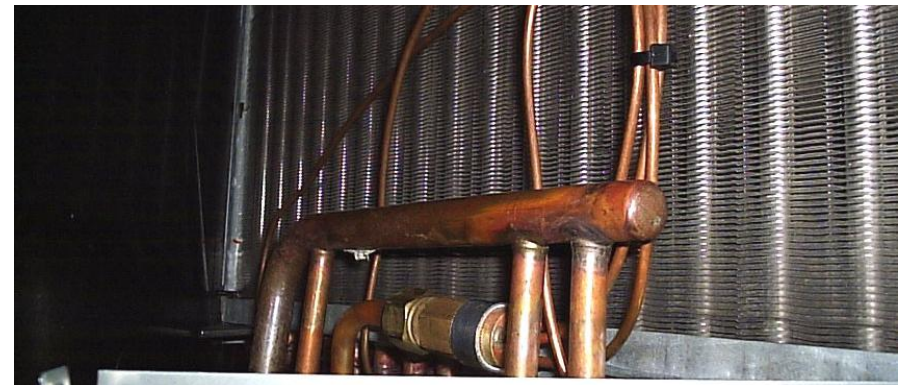


Figure 20. Finned evaporator with copper refrigerant tubing

CONSUMER AND GENERAL PRODUCTS

Copper and copper alloys are found in a wide range of consumer and general products. Electrical and electronic appliances, computers, air-conditioning and refrigeration equipment, cookware, brassware, locks and keys are among the many products that make use of copper's conductivity, durability, corrosion resistance and aesthetic properties.

Copper alloys have also been used for coinage for centuries and remain present in many circulating coins around the world. Copper content and alloy composition vary considerably according to denomination and country.

Copper is also an essential micronutrient for plants and animals. In areas where soils or feed are deficient in copper, copper-containing products may be used in agriculture and animal nutrition to correct deficiencies.



Figure 21. Copper bracelet handmade



Figure 22. Brass cylinder lock and keys



Figure 23. Copper cookware

TRANSPORTATION

All major forms of transportation use copper for electrical, mechanical and thermal-management applications. In road vehicles, copper is used in wiring harnesses, motors, generators, connectors, electronic systems, power electronics, braking systems and heat-management equipment.

The increasing electrification of transport is expanding copper requirements. Electric vehicles generally contain substantially more copper than conventional internal-combustion-engine vehicles, although copper intensity varies according to vehicle type, size and design. Copper is used in electric motors, batteries, inverters, busbars, wiring and charging systems, while the expansion of electric mobility also requires investment in charging and electricity-grid infrastructure.

Global electric car sales exceeded 20 million units in 2025, an increase of around 20% from 2024, and accounted for approximately one-quarter of all new cars sold worldwide. Continued growth in electric mobility is expected to support copper demand both within vehicles and in the infrastructure required to charge them.

Copper and copper alloys are also extensively used in railways, aircraft and marine transport. Rail applications include traction motors, transformers, power electronics, signalling, wiring and electrification infrastructure. In marine applications, copper-nickel alloys are used in piping, heat exchangers and other equipment exposed to seawater and can also be used to reduce marine biofouling.



Figure 24. Electric vehicles charging at a solar-powered EV charging station

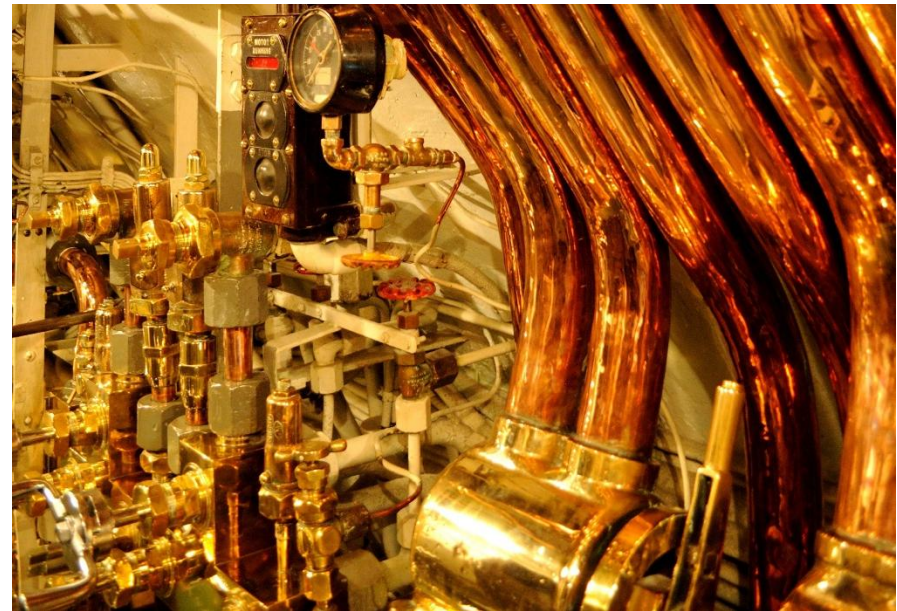


Figure 25. USS Bowfin submarine - Close-up of Copper Tubing.

GROWTH MARKETS FOR COPPER USE

In the longer term, copper usage is expected to benefit from the continuing electrification of the global economy, the transition towards lower-carbon energy systems and the development of new technologies. Markets with the potential to generate additional copper requirements include:

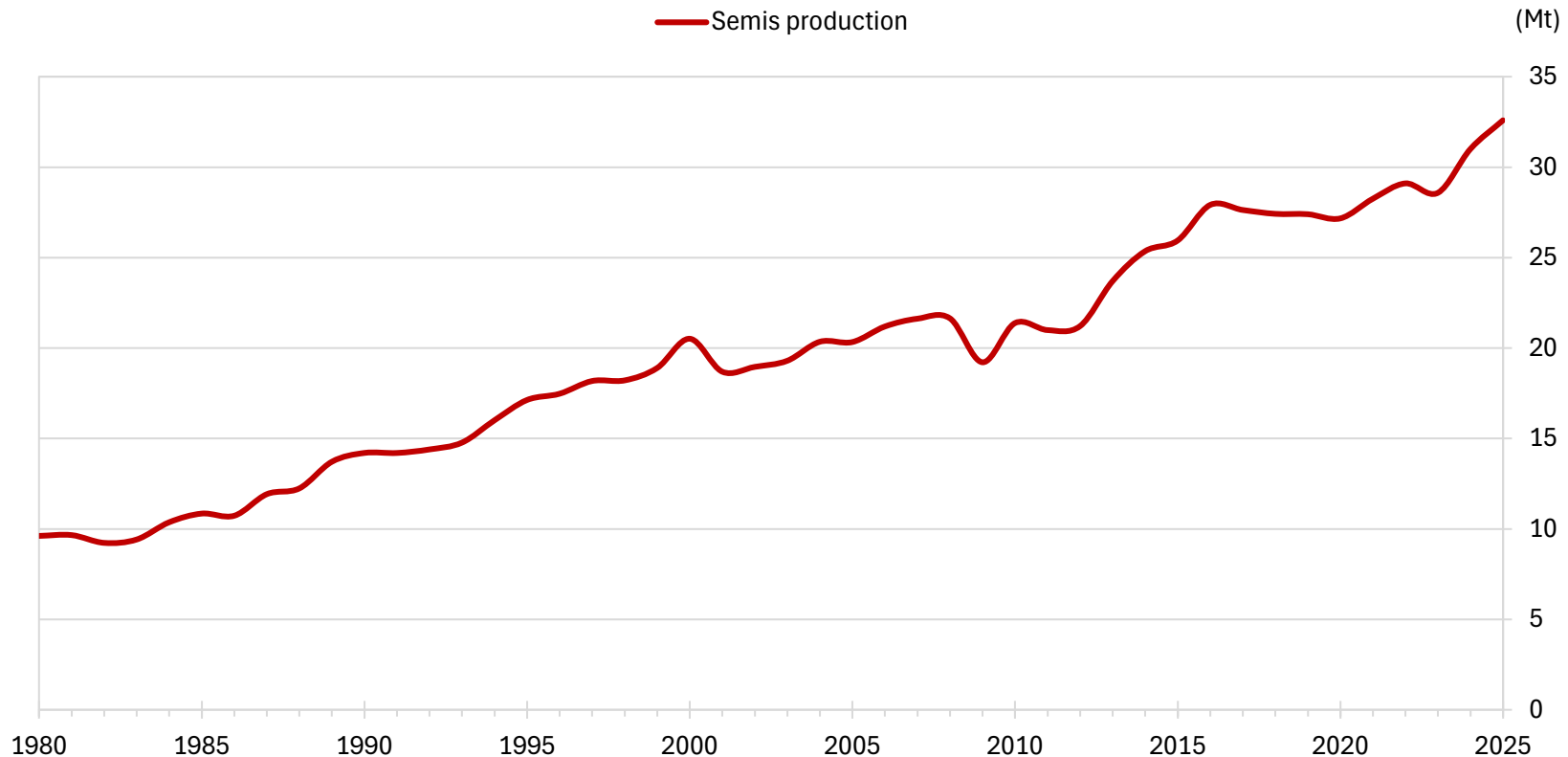
- 1. Power grids and electrification:** Rising electricity demand and the electrification of transport, buildings and industry will require substantial expansion and reinforcement of transmission and distribution networks, increasing requirements for cables, transformers, substations, switchgear and other copper-containing equipment.
- 2. Renewable energy:** Continued deployment of wind and solar energy generation could increase copper usage in generators, transformers, inverters, cabling and connections. Additional grid infrastructure will also be required to connect geographically dispersed and variable renewable generation.
- 3. Electric mobility:** Further electrification of cars, buses, commercial vehicles and other forms of transport could increase copper requirements in vehicles, charging infrastructure and supporting electricity networks. Electric vehicles generally contain more copper than conventional vehicles because of their greater use of electric motors, batteries, power electronics and wiring.
- 4. Energy storage:** Increasing deployment of battery and other energy-storage systems could create additional copper demand

in electrical connections, busbars, power electronics, cabling, transformers and the infrastructure required to integrate storage into power systems.

- 5. Data centres and digital infrastructure:** Continued growth in cloud computing, artificial intelligence and other computing-intensive technologies could increase copper usage in data centres and the power infrastructure that supports them, including cabling, busbars, cooling systems, transformers, switchgear and grid connections.
- 6. Building electrification:** Wider adoption of heat pumps, air-conditioning, distributed renewable generation, battery storage and EV charging could increase the copper intensity of residential and commercial buildings and require additional electrical distribution infrastructure.
- 7. Industrial electrification and automation:** Replacement of fossil-fuel-based processes by electrical technologies, together with increasing automation, robotics and digitalisation of manufacturing, could support additional copper usage in motors, drives, controls, power electronics and electrical distribution systems.
- 8. Emerging copper technologies and applications:** Advances in material science could create new uses for copper and copper alloys. Areas under development include ultra-conductive copper composites incorporating nanocarbon materials, antimicrobial surfaces, copper-alloy aquaculture systems and copper-based seismic energy-dissipation technologies.

WORLD COPPER SEMIS PRODUCTION, 1980–2025

Million metric tonnes (Mt), gross weight

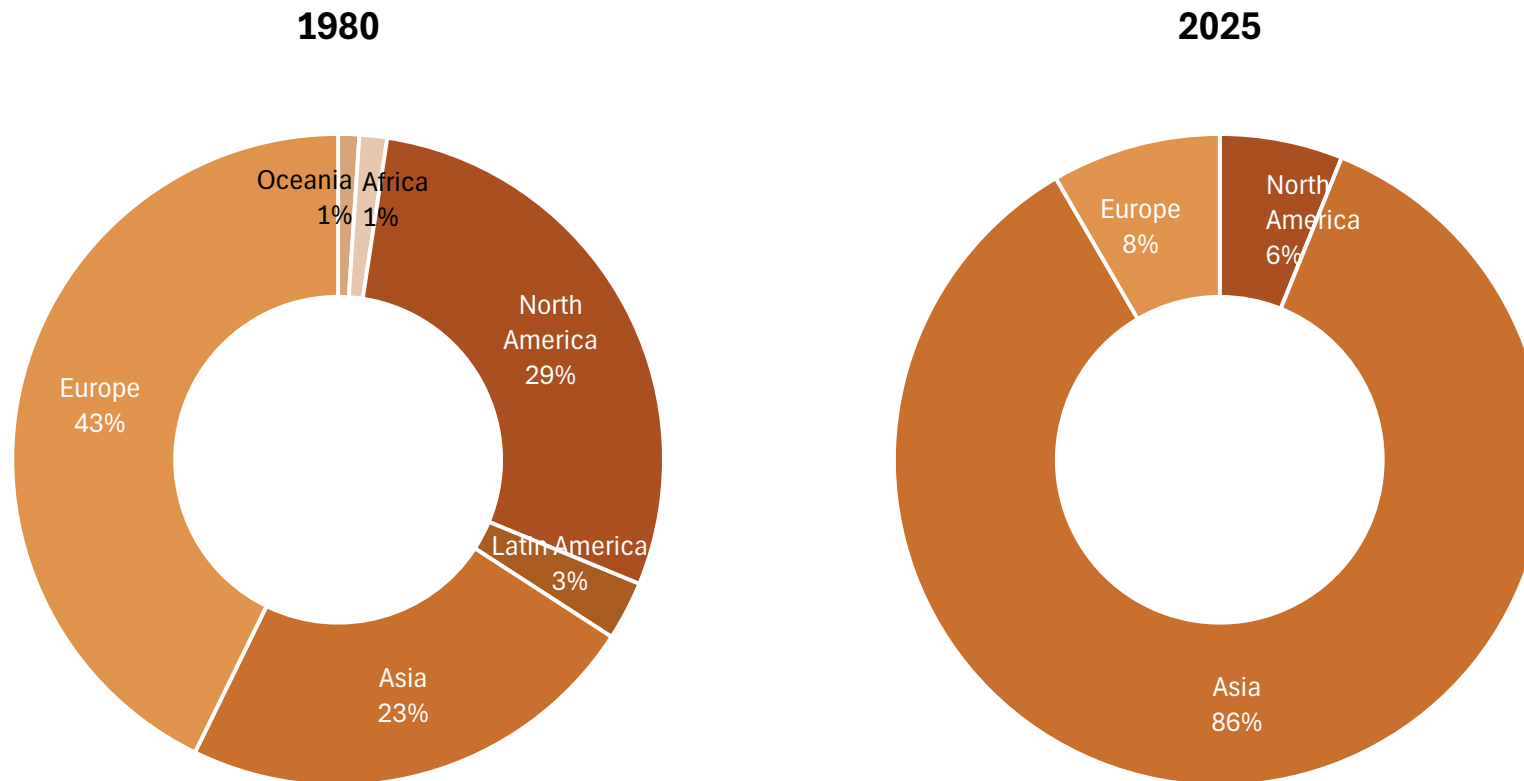


Global production of copper and copper-alloy semis has more than tripled since 1980, rising from around 9.5 Mt to 32.5 Mt in 2025. Semis fabricators are the “first users” of copper, transforming refined and other unwrought copper materials, together with direct-melt scrap, into semi-finished copper and copper-alloy products. Modern fabrication combines processes such as casting, rolling and extrusion, with integrated production technologies supporting higher productivity, consistent quality and efficient material use.

Note: 2025 Preliminary; data for some countries still incomplete

WORLD COPPER SEMIS PRODUCTION BY REGION, 1980 vs. 2025

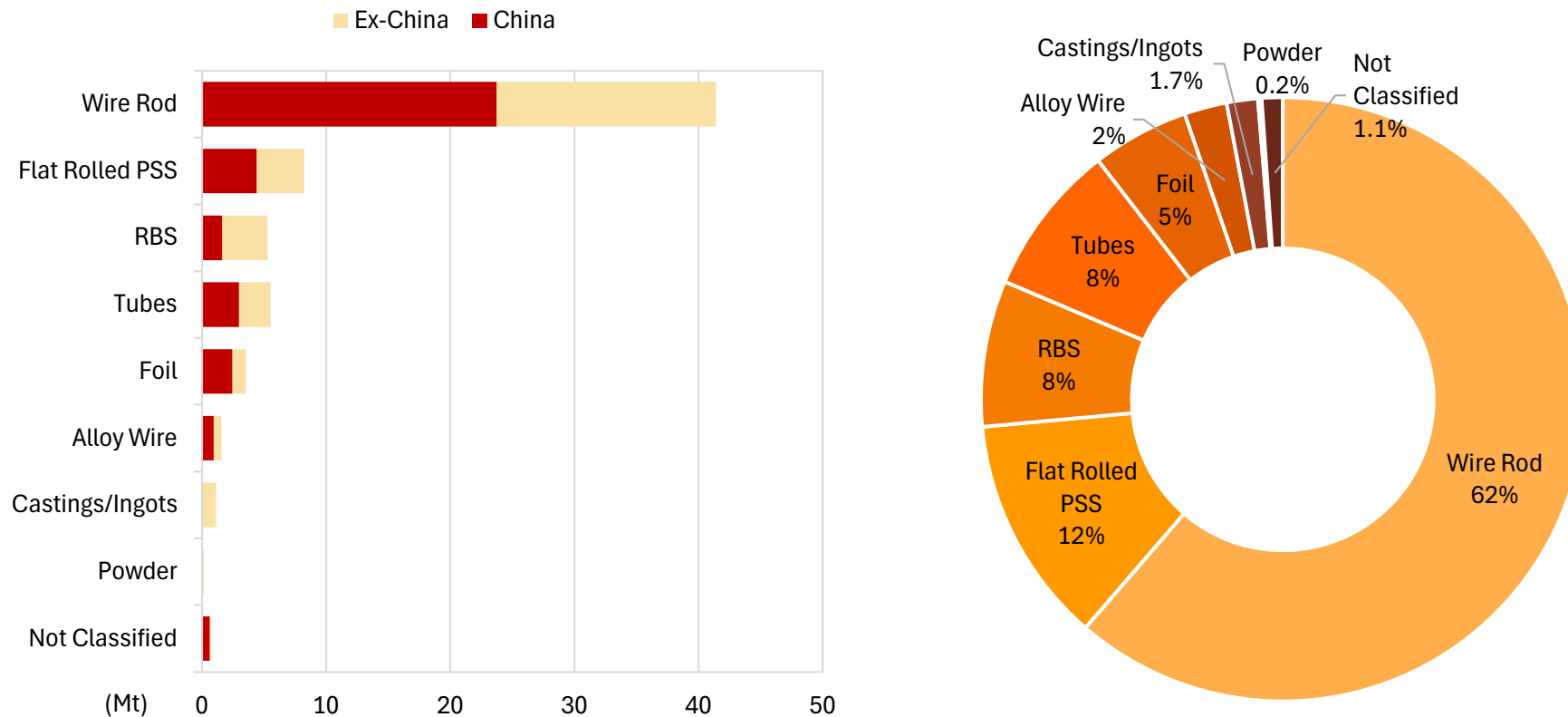
Percentage share (%)



Unlike mining, which is largely determined by geology, copper fabrication tends to develop close to major manufacturing and consumption centres. Since 1980, global semis production has shifted markedly towards Asia, whose share increased from 23% to 86% in 2025, driven particularly by China's expanding downstream industry and investment in fabrication capacity. As a result, production has become more geographically concentrated, while Europe's share declined from 43% to 8% and North America's from 29% to 6%.

Note: 2025 Preliminary; data for some countries still incomplete

WORLD COPPER SEMIS PRODUCTION CAPACITY BY REGION AND PRODUCT, 2025

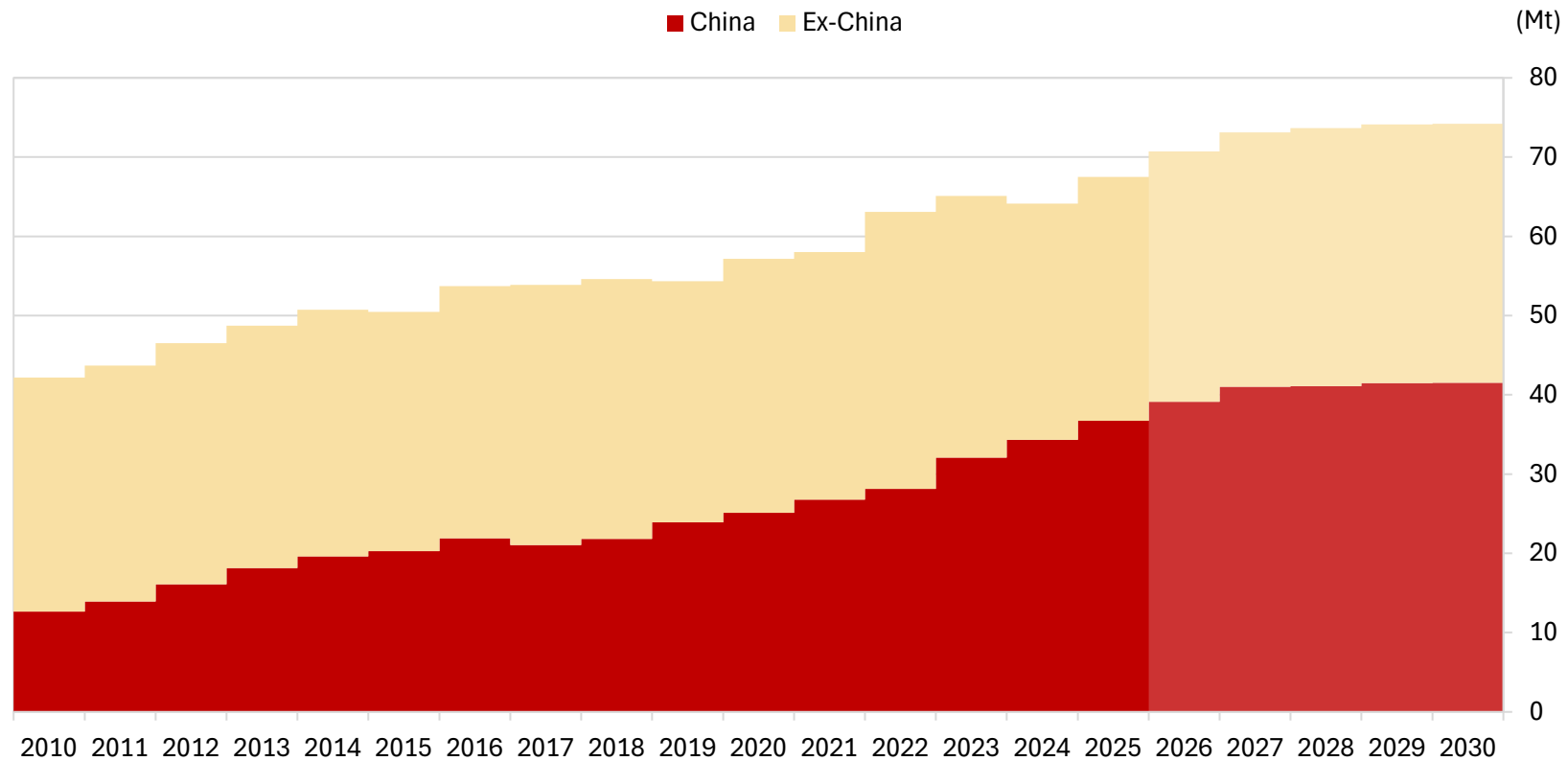


Global semis capacity reflects the close relationship between copper fabrication and downstream manufacturing. China accounts for a substantial share of capacity across most product categories, following sustained investment alongside the expansion of its industrial base. Wire rod dominates the product mix, representing 62% of global semis capacity, reflecting copper's extensive use in electrical applications, particularly wiring, power networks and electrical equipment.

Note: Capacity data reflect production capability and should not be interpreted as actual or forecast production.

WORLD COPPER SEMIS PRODUCTION CAPACITY TRENDS, 2010–2030

Million metric tonnes (Mt), gross weight



World copper and copper-alloy semis production capacity has expanded substantially, driven primarily by investment in China. Global capacity increased from around 42 Mt in 2010 to 67.5 Mt in 2025 and, based on existing and planned projects, could approach 74 Mt by 2030. China accounted for most of the increase and now represents more than half of global capacity. Looking ahead, capacity growth is expected to slow, particularly in China, where substantial existing capacity and relatively low utilisation rates are limiting the need for further expansion.

Note: Capacity data reflect production capacity and should not be interpreted as actual or forecast production.

8. COPPER RECYCLING

Copper retains its fundamental properties through repeated recycling, making secondary material an established component of global copper supply. Recycling reduces demand for primary raw materials and can lower energy use and associated environmental impacts. Its contribution, however, depends on more than the quantity of copper contained in products and infrastructure. Material must first become available, be collected, sorted and processed to a quality suitable for reuse.

Copper scrap follows two principal routes. Clean, well-defined material can be remelted directly by semi-fabricators, avoiding much of the processing required to produce refined copper. More complex or contaminated material can pass through smelting and refining, where impurities are removed and copper of primary-equivalent quality can be recovered. It is estimated that these routes supplied around 11.8 million tonnes of copper in 2025, with the global Recycling Input Rate (RIR) at around 34%. The RIR measures the contribution of recycled material to total copper usage and should not be confused with the end-of-life recycling rate, which measures recovery from discarded products.^{1/}

Scrap availability is shaped by time as well as volume. New scrap generated during manufacturing is generally clean, identifiable and readily returned to production. Old scrap becomes available only when products reach the end of their useful lives, which may take decades for buildings, power networks and industrial equipment. Material that is not collected does not necessarily remain readily recoverable: some enters landfill, is dissipated, remains in place or accumulates in hibernating stocks.



Figure 26. Copper scrap. Source: BHP.

Quality creates a second constraint. Modern products combine copper with other metals, plastics and electronic components, making dismantling and separation more demanding. High-quality scrap can enter efficient direct-melt routes, while lower-grade material may require additional sorting, smelting and refining. As the scrap mix shifts towards more complex end-of-life products, better collection and material separation become central to preserving copper quality and directing each scrap stream to the most appropriate processing route.^{2/}

Secondary copper supply has expanded in absolute terms, but its share of total supply has remained broadly stable over the past decade. This reflects the interaction of product lifetimes, collection efficiency, scrap quality, processing capacity and industrial demand. Recycling can improve resource efficiency and reduce pressure on primary supply, but it cannot fully substitute for mining while copper demand and in-use stocks continue to expand. Better collection, sorting, product design and processing technology will determine how much copper already circulating through the economy can return as usable supply.

1/ International Copper Study Group, *Copper Recycling Survey, 2022–2026 editions*.

2/ Loibl, A. & Tercero Espinoza, L.A. (2021), *Current challenges in copper recycling: aligning insights from material flow analysis with technological research developments and industry issues in Europe and North America, Resources, Conservation & Recycling*.

RECYCLING RATE DEFINITIONS

The recycling performance of copper-bearing products can be measured in several ways, depending on the objective, scope and data availability. No single recycling rate provides a complete picture. Indicators may measure the contribution of secondary material to metal supply, the collection of products reaching end of life, or the efficiency with which collected material is processed and returned to productive use.

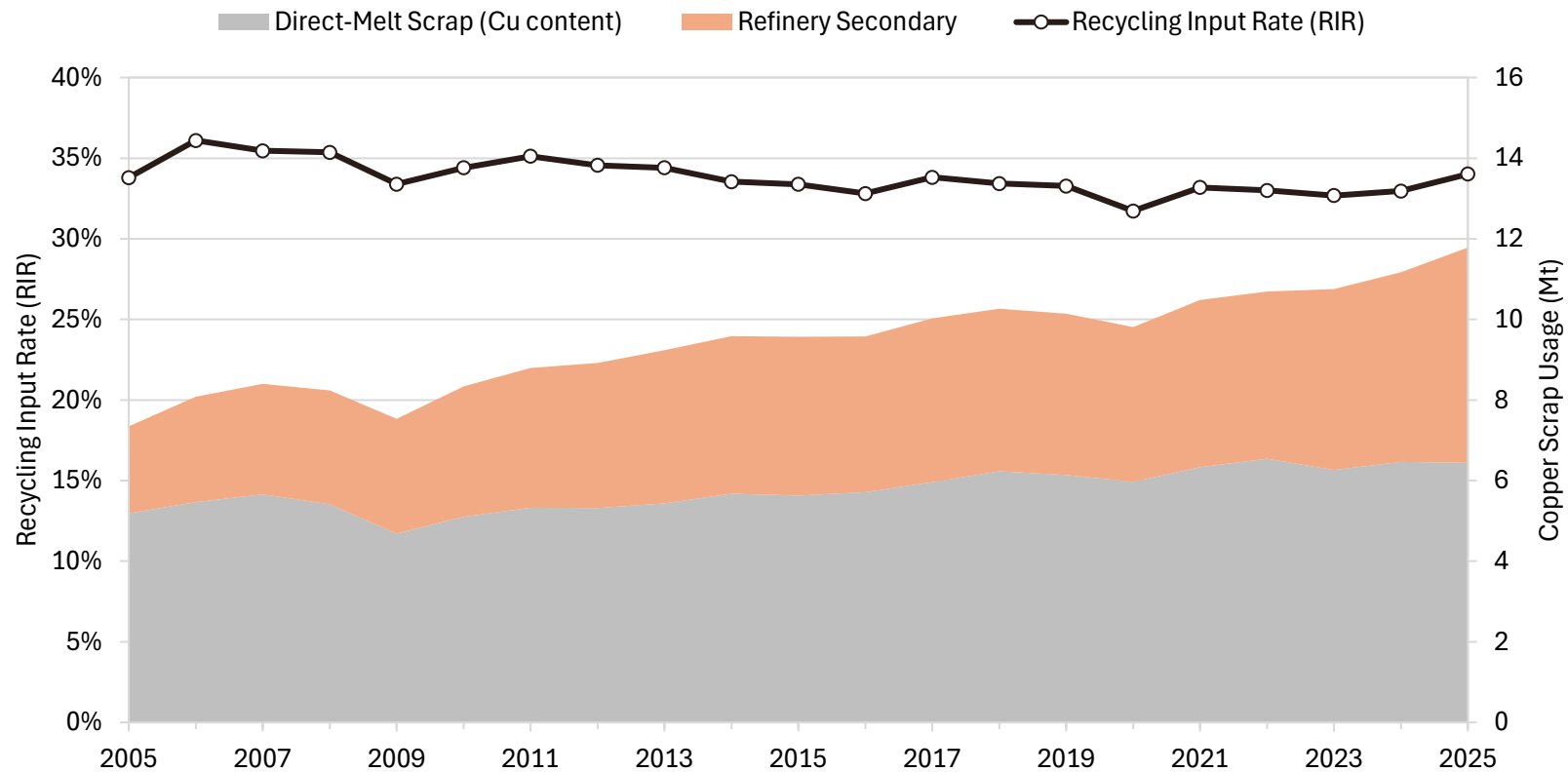
- **Recycling Input Rate (RIR):** Proportion of total copper use supplied by recycled copper inputs, comprising secondary refined copper and scrap directly melted by semi-fabricators. It measures the contribution of secondary raw materials to copper supply rather than recycling efficiency. A relatively low RIR does not necessarily imply poor recycling performance. For metals such as copper, long product lifetimes and expansion of in-use stocks can mean that scrap availability is substantially smaller than current metal demand.
- **Overall Recycling Efficiency Rate:** Proportion of available new and old scrap that is collected and prepared for recycling. It combines collection and pre-processing performance and helps identify losses before material reaches the final metal recovery stage.
- **End-of-Life (EoL) Recycling Rate:** Proportion of metal in products reaching the end of their useful lives that is collected and returned to functional use. Performance can vary substantially by application: metals in large, valuable and readily

identifiable products are generally easier to recover than small quantities dispersed through complex products.

- **EoL Collection Rate:** Proportion of metal-bearing products reaching the end of their useful lives that enter a recycling chain. Collection is frequently the weakest link: efficient metallurgical recovery cannot compensate for material that is discarded, dissipated, stored indefinitely or otherwise fails to reach an appropriate recycling route. Performance depends on product value, accessibility, collection infrastructure and incentives.
- **EoL Processing Rate:** Efficiency with which collected scrap is sorted, pre-processed and recovered through metallurgical recycling. Performance depends on scrap composition, product design, separation technologies and the available metallurgical route. Clean, concentrated streams can achieve high recovery rates, while metals present in small quantities in complex or multi-material products can be more difficult to recover.

Recycling rates should be interpreted in context. Differences across metals do not necessarily indicate that one recycling system performs better than another. High-value metals used in concentrated and easily recoverable applications can support strong economic incentives for collection, while metals dispersed in electronics or complex alloys may be technically recoverable but difficult to separate economically. Long-lived applications also delay the return of material to the scrap market. Recycling performance depends on historical consumption, product lifetime, material concentration, product design, collection systems, processing technology and economics.

WORLD COPPER RECYCLING INPUT AND RECYCLING INPUT RATE (RIR), 2005–2025



World Copper Recycling Input increased from 7.3 Mt in 2005 to 11.8 Mt in 2025, while the Recycling Input Rate (RIR) remained close to one-third, at 33.8% and 34.0%, respectively. The composition of secondary supply also shifted, with refinery secondary recording a 4.6% compound annual growth rate (CAGR) over the period, compared with 1.1% for direct melt scrap. This highlights why recycling should be assessed in both tonnes and market share. A broadly stable RIR does not imply stagnant secondary supply; recycled copper can provide substantially more material without gaining share when primary and secondary supply expand at similar rates.

Direct-melt copper scrap figures for 2025 are preliminary estimates, as is the Recycling Input Rate (RIR).

GLOBAL COPPER FLOWS AND DERIVED RECYCLING RATES, 2020

Figures produced for the International Copper Association by Fraunhofer Institute for Systems and Innovation Research based on Environ. Sci. Technol. 47 (12), pp. 6564–6572, freely available at <http://dx.doi.org/10.1021/es400069b>

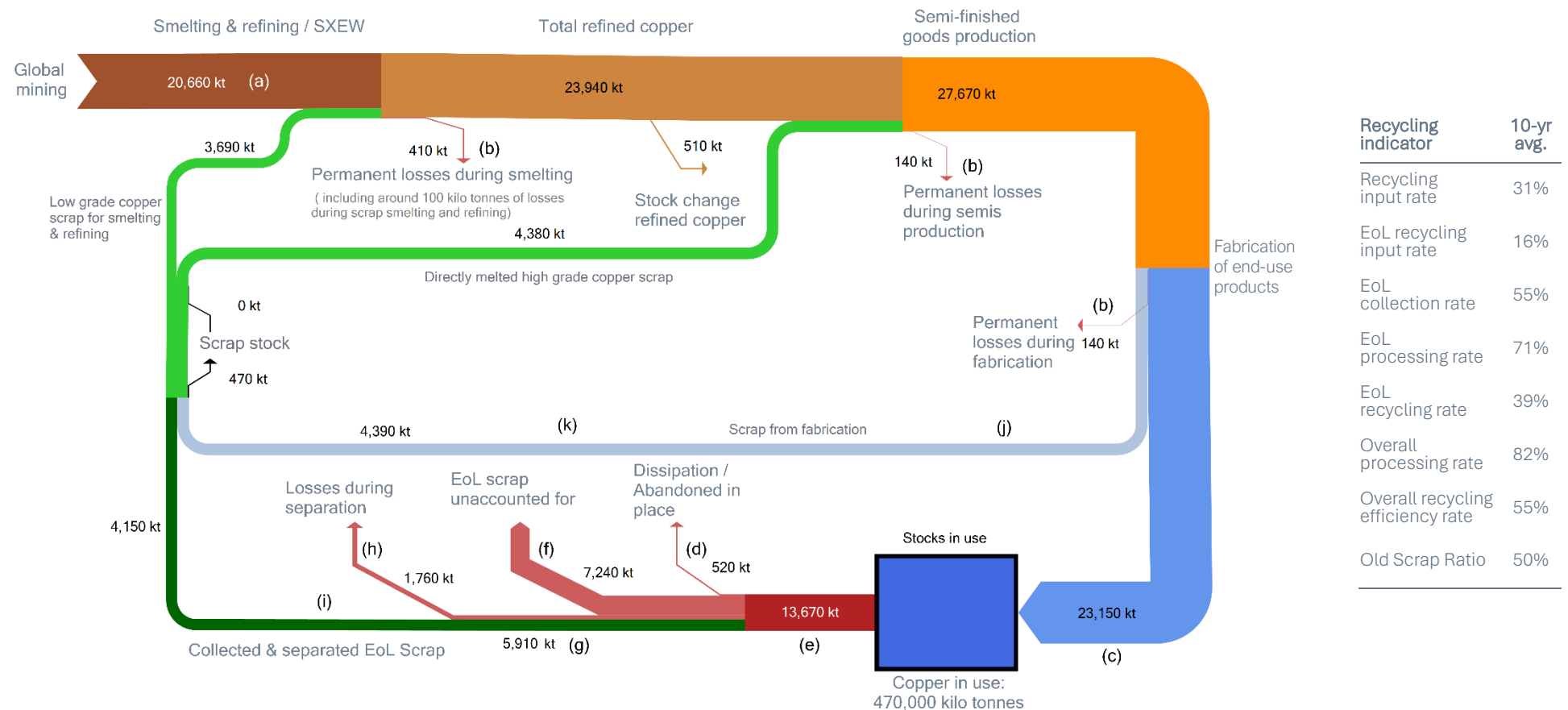


Figure 27. Dynamic Analysis of Global Copper Flows as of 2020. The model and recycling indicators will be updated periodically by ICA and Fraunhofer.

ICSG GLOBAL COPPER SCRAP RESEARCH PROJECT AND RECENT REPORTS

Based on interest expressed by member countries, ICSG launched the copper scrap market project in 2007 in order to provide greater transparency on an increasingly vital component of the world copper market at a time when globalisation is reshaping the copper scrap and copper alloy recycling business. The final report of the project was published in August 2010.

Since then, ICSG has completed a number of detailed new reports on scrap recovery and supply in NAFTA, Europe, the Middle East, Asia, and China.

Recycling has become an essential and crucial part of the copper industry, not only as a complement to primary supply but as an important contributor to a sustainable circular economy and as a means to meet increased future demand for copper.

In recent years, interest in expanding the capacity of secondary smelters and refineries has grown significantly, prompting the announcement of numerous new projects, several of which are already under development. This trend is expected to reshape global scrap markets and trade flows, while also contributing to a greater supply of refined copper.

In 2024, the ICSG launched a comprehensive project to assess developments in the secondary smelting and refining industry, including the evaluation of new projects, the analysis of regulatory factors affecting scrap collection, trade, and use, and the

enhancement of its secondary production database to better support recycling rate estimates. This study on the global secondary smelting and refining industry has now been completed.

Key Drivers of the Global Copper Scrap Market:

- Expanding Copper Mine Production and Refined Copper Substitution
- Industrialisation and Economic Growth
- Prices
 - Copper Scrap Prices and Spreads
 - Refined Copper Prices and the Demand for Scrap
- Chinese scrap market developments
- The Shift in Regional Scrap Processing Capacity
- Regulations on Recycling and Trade
- Technology

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- Copper Use in Fabrication in Japan, Korea, Taiwan (China), and Vietnam (2018)
- Industrial Use of Refined Copper and Scrap in Fabrication in China (2017)
- Manufacture and Use of Semi-fabricated copper in Latin America/Canada (2017)

ANNEX: WORLD COPPER STATISTICS, 1960–2025

Thousand metric tonnes (kt) of copper content

	Mine Production	Refined Production	Refined Usage		Mine Production	Refined Production	Refined Usage		Mine Production	Refined Production	Refined Usage
1960	3,924	4,998	4,738	1982	7,745	9,319	9,090	2004	14,594	15,918	16,743
1961	4,081	5,127	5,050	1983	7,824	9,541	9,510	2005	14,927	16,572	16,552
1962	4,216	5,296	5,048	1984	8,135	9,440	9,930	2006	14,983	17,288	16,917
1963	4,286	5,400	5,500	1985	8,314	9,616	9,798	2007	15,508	17,895	18,026
1964	4,443	5,739	5,995	1986	8,295	9,920	10,112	2008	15,532	18,191	17,877
1965	4,769	6,059	6,193	1987	8,620	10,148	10,293	2009	15,941	18,234	17,870
1966	4,987	6,324	6,445	1988	8,773	10,512	10,668	2010	15,988	18,966	19,136
1967	4,743	6,004	6,195	1989	9,086	10,908	11,081	2011	15,962	19,586	19,709
1968	5,010	6,653	6,523	1990	9,227	10,805	10,886	2012	16,680	20,171	20,479
1969	5,682	7,212	7,137	1991	9,373	10,686	10,563	2013	18,174	21,025	21,408
1970	5,900	7,592	7,291	1992	9,497	11,042	10,866	2014	18,423	22,458	22,906
1971	5,941	7,404	7,296	1993	9,571	11,274	10,992	2015	19,158	22,808	23,046
1972	6,541	8,100	7,942	1994	9,539	11,118	11,560	2016	20,401	23,326	23,486
1973	6,915	8,544	8,740	1995	10,070	11,817	12,043	2017	20,066	23,519	23,682
1974	7,097	8,759	8,310	1996	11,084	12,628	12,489	2018	20,604	24,071	24,479
1975	6,735	8,187	7,445	1997	11,514	13,425	13,082	2019	20,657	24,127	24,351
1976	7,289	8,632	8,539	1998	12,228	14,032	13,440	2020	20,753	24,620	24,953
1977	7,444	8,884	9,057	1999	12,767	14,576	14,223	2021	21,246	24,906	25,259
1978	7,306	9,030	9,527	2000	13,199	14,793	15,122	2022	21,904	25,278	25,857
1979	7,372	9,200	9,848	2001	13,636	15,638	14,938	2023	22,346	26,508	26,642
1980	7,227	9,261	9,396	2002	13,487	15,354	15,133	2024	22,955	27,414	27,420
1981	7,721	9,573	9,522	2003	13,699	15,272	15,641	p/ 2025	23,201	28,656	28,200

p/ preliminary

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