

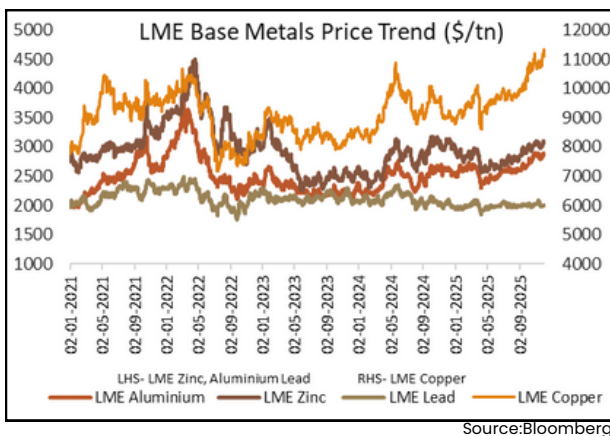
Base Metals Market

Executive Summary (Short)

Base metals, mainly copper, aluminium, nickel, zinc, and lead, face two strong trends: the shift towards electrifying and decarbonizing energy systems, which increases the metal use per unit of output, and a situation where new mining supply encounters growing technical, environmental, and geopolitical challenges. Over the next decade, the demand for copper and aluminium is likely to rise significantly. However, supply will respond slowly due to permit delays, capital expenditure cycles, and declining ore grades, leading to tighter markets and price fluctuations. Recycling and secondary supply will increase and ease some pressure, but they cannot quickly replace primary mined metal. Policies and geopolitical issues will add to the volatility: carbon regulations, trade limitations, and strategies around critical minerals could tighten markets further or shift value to countries with integrated supply chains.

1. Why base metals matter now: structural demand drivers

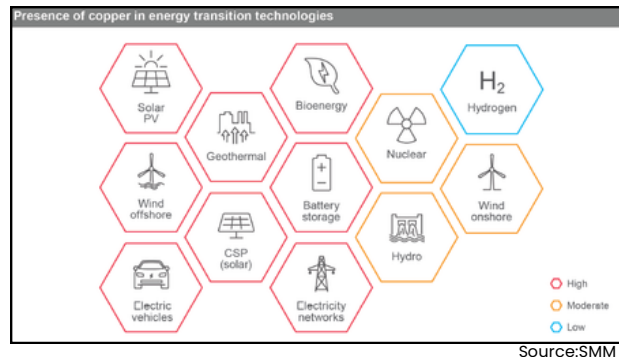
Base metals have shown strong performance in global commodity markets throughout 2025, driven by tight supply, rising demand, and favorable macro conditions. Copper has reached new record highs, while aluminium and zinc have also performed well, highlighting the sector's overall momentum. This performance indicates not just a temporary rebound in industrial activity but also a deeper, long-term shift in global consumption patterns.



Today, three megatrends are shaping the metals landscape more than traditional manufacturing cycles:

Key Factors 1A. EVs are a copper engine: EVs use up to four times more copper than regular cars, and charging networks increase that demand. With copper demand from EVs expected to double by 2035 (SMM), this metal becomes essential in the clean-energy era.

1B. Digital + renewable boom = heavy metal usage:



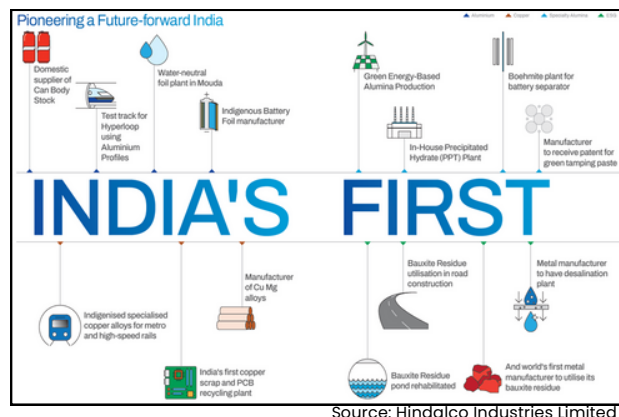
Data centers, telecom towers, wind farms, solar parks, and grid upgrades all need a lot of copper and aluminum. The IEA anticipates a rise in electricity use between 2030 and 2040, which will require larger and denser grids and significantly more metal.

1C. Rapid urbanization is driving strong demand as fast-growing economies expand cities, infrastructure, and industries. Despite higher recycling rates, the need for primary metals remains robust

2 The supply side: geological, economic and political limits

Supply isn't just about adding capacity. Key challenges include:

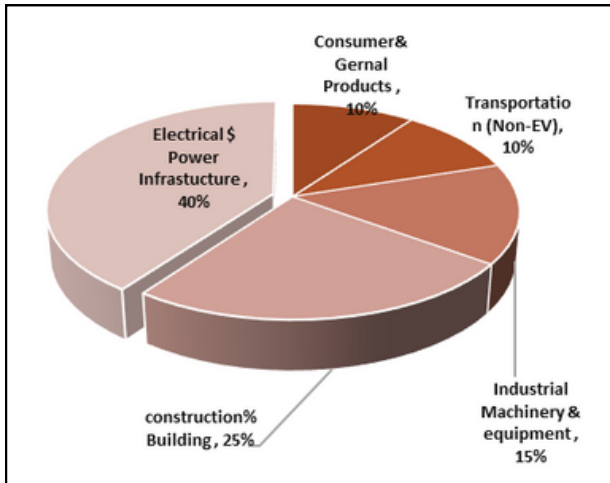
- **Slow supply response:** New mines and smelters take nearly a decade to build. Stricter ESG rules are making approvals slower and more expensive. Supply cannot ramp up quickly, even when prices increase.
- **Lower-quality ores.** Many major deposits are getting older, and ore grades are steadily declining. The lack of significant new discoveries makes the issue worse.
- **Supply concentrated in a few countries.** Refining and processing are controlled by a few nations, especially China. This creates a real risk. Any trade restrictions, tariffs, or geopolitical tensions can disrupt global metal flows overnight.



Metals by Metals Lens

I. Copper the strategic metal

Copper is central to global electrification. Most major forecasters expect structural deficits in almost all long-term scenarios unless significant investments in new mines and recycling capacity increase quickly. Demand from electric vehicles, power grids, renewable energy, and data centers drives the main structural growth.

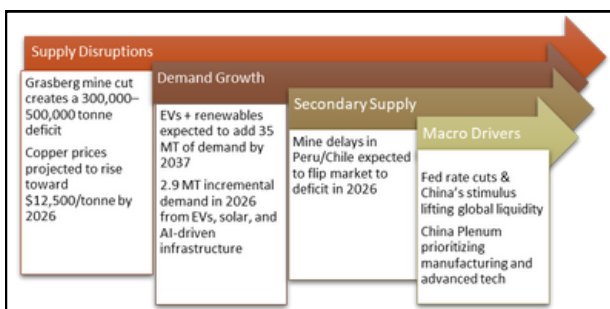


On the supply side, risks come from aging mines, declining ore grades, permitting delays, and high geographical concentration in a few areas. Prices will remain sensitive to short-term shocks, including strikes, accidents, and policy announcements, even as the long-term price floor continues to rise. Expect volatility, periodic backwardation, and high physical premiums if supply growth fails to keep up.

Key risk factors:

Delays in Chinese economic stimulus
Intensifying trade wars
Concerns about an AI-driven investment bubble

Key Drivers



Source: Bloomberg

► CURRENT COPPER INDUSTRY SIZE IN INDIA:

India's copper industry is witnessing significant growth. In FY 2024-25, refined copper production rose by 7.1% to 497,000 metric tons, while domestic consumption reached 750,000 metric tons, necessitating imports of around 500,000 metric tons.

The Indian copper market was valued at approximately USD 26.24 billion in 2024 and is expected to reach USD 38.31 billion by 2030, growing at a CAGR of 7.2%.

Growth is driven primarily by renewable energy projects, electric vehicle adoption, and infrastructure development. Despite substantial copper resources, only 18% are classified as reserves.

► FUTURE OUTLOOK OF THE COPPER INDUSTRY

India's copper sector is at a transformative stage, with the market value projected to grow from USD 15.09 billion in 2024 to USD 25.06 billion by 2032, at a CAGR of 6.65%. Key growth drivers include infrastructure (which accounts for 43% of copper demand and is growing at 11%), transportation (34% of demand, supported by railway electrification and automotive expansion), and the clean energy transition.

Supply constraints continue, as domestic production of 555,000 tonnes annually remains below consumption, leading to imports of nearly 500,000 tonnes. Expansion plans such as Hindustan Copper's ₹2,000 crore project to increase capacity to 12.2 MTPA by FY31, JSW Group's ₹2,600 crore investment in Jharkhand mines, and Adani's 500,000-tonne smelter are expected to help bridge the supply gap. By 2030, demand may double to 3.3 million tonnes, positioning India as the world's fastest-growing copper market, despite maintaining an import dependence exceeding 90%.

► COPPER PRODUCERS IN THE WORLD

According to India blooms the world's top copper-producing countries are led by Chile, which produces about 5.3 million metric tonnes annually, followed by the Democratic Republic of Congo (DRC) with 3.3 million tonnes and Peru with 2.6 million tonnes. China produces around 1.8 million tonnes, while Indonesia and the United States each produce approximately 1.1 million tonnes.

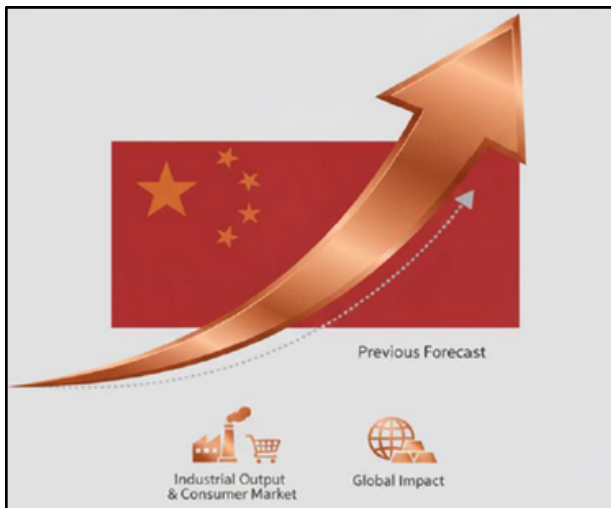
Other major contributors include Russia (0.93 million tonnes), Australia (0.80 million tonnes), Kazakhstan (0.74 million tonnes), and Mexico (0.70 million tonnes).



Source: USGS

► CHINA'S ECONOMY IS FORECAST TO GROW FASTER THAN EXPECTED IN 2026

China's economy is expected to grow faster than previously anticipated, supported by strong export momentum and a strategic shift toward advanced, high-tech manufacturing.

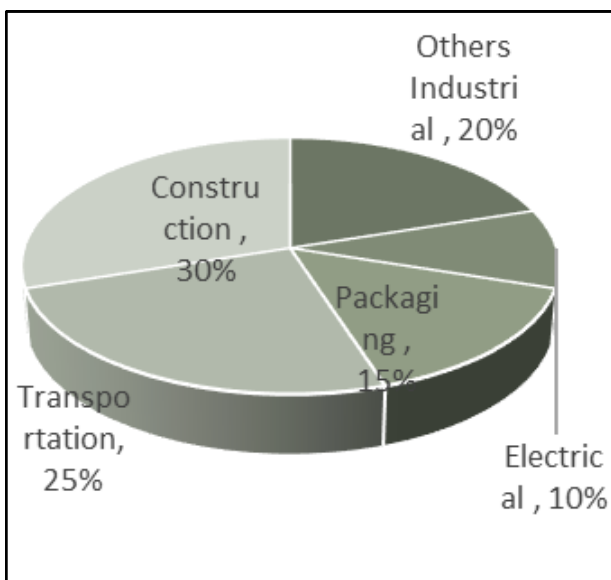


Goldman Sachs has raised its real GDP growth forecasts to 4.8% for 2026 and 4.7% for 2027, driven by upgraded expectations of 5–6% annual export growth as Chinese goods gain global market share despite tariff pressures.

The approval of China's new 15th Five-Year Plan (2026–2030) underscores the government's commitment to industrial upgrading, technology self-reliance, and expanding competitiveness in sectors such as semiconductors, automobiles, and new-energy industries. A recent trade truce between President Trump and President Xi has further strengthened the outlook, with China leveraging its dominance in rare earth minerals to negotiate eased US tariffs.

While the property downturn continues to weigh on the economy, its impact is gradually diminishing. Policymakers are expected to support growth through targeted monetary easing and fiscal expansion. Overall, China is positioned for resilient, export-driven growth, increasingly competing with advanced global manufacturing hubs and shaping global trade dynamics.

II. Aluminium, Flexible Supply but Carbon Constraints Tighten

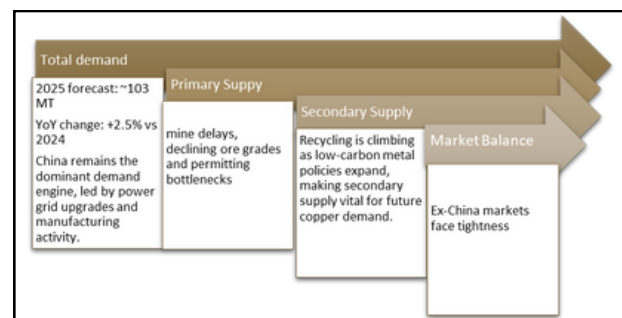


Aluminium benefits from diverse industrial demand and high recyclability. However, the main structural driver is energy and carbon. Aluminium smelting is very energy-intensive, and producers are increasingly shifting to low-carbon or renewable power sources to access premium markets, especially as low-carbon aluminium certification programs grow.

This transition could change cost structures and reward low-emission producers as buyers and policymakers seek cleaner supply chains.

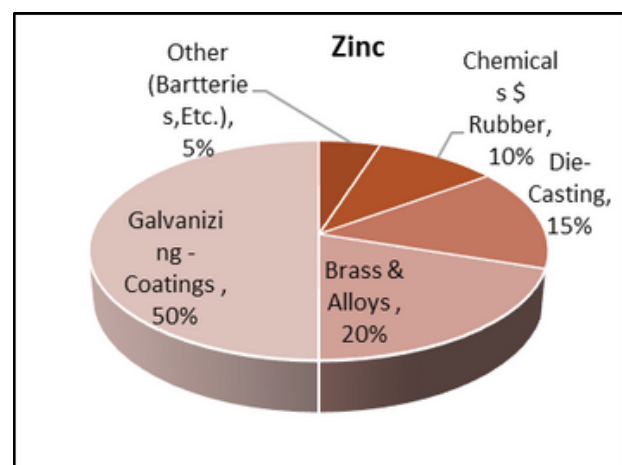
Over the next decade, primary supply may still grow, but rising energy costs, carbon policies, and strong demand for low-carbon materials will lead to price differences and availability challenges across regions.

Key Drivers



III. Zinc, Lead Niche Drivers, Limited Headline Risk

Zinc and lead are often seen as secondary metals in the base-metals market, overshadowed by copper, aluminum, and nickel. However, over the next decade, both metals are influenced by significant factors like aging mines, changing environmental regulations, technological changes, and shifting demand across Asia, Africa, and emerging industrial economies. While they don't have the same electrification hype as copper or nickel, their long-term prospects are not stagnant.



Zinc Outlook: Moderately bullish over a decade horizon due to stable demand + constrained supply.

Drivers

- Infrastructure, utilities, and renewable energy buildout
- Galvanised steel demand in Asia & Africa
- Ageing mines tightening supply
- Environmental & energy rules affecting smelter output

Risks: Deep cyclical downturn in global construction

- Substitution technologies (still limited)
- Environmental shutdowns or smelter over-capacity cycles

Lead Outlook: Stable to mildly optimistic it's not a growth story, but it is a dependable one. Drivers: - Lead-acid batteries are still vital for cars and backup power.

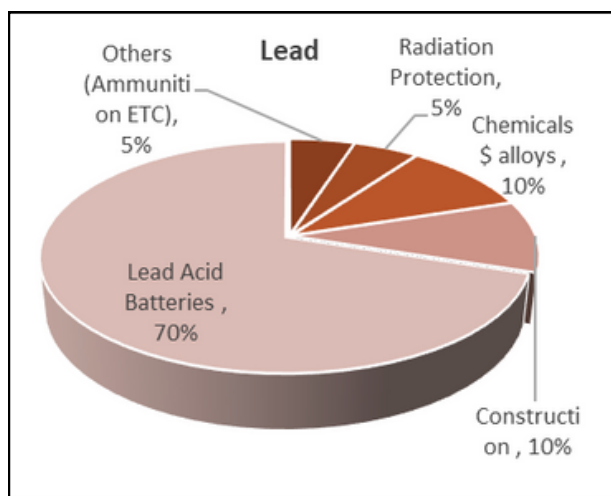
-High recycling rates stabilize supply and avoid oversupply.

-Growth in telecom, data centers, and off-grid power keeps demand steady.

Risks: Stricter environmental regulations could raise production costs.

-Faster adoption of lithium-ion batteries in backup-storage could disrupt the market.

-A decline in internal combustion engine vehicle sales could lower starter-battery demand.



Source: Bloomberg

Conclusion:

The Decade When Base Metals Become the New Energy Backbone: Base metals will be central to the green transition and digital growth. Over the next 10–15 years, copper and aluminium are expected to see stronger structural demand and greater policy attention than in previous cycles. Supply responses will remain slow and uneven, leading to persistent price volatility and higher premiums for physical metal. Recycling and efficiency improvements will ease some of the pressure, but even optimistic scenarios for secondary supply still leave a substantial need for primary mined metal.



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