

Growth and Opportunities of Aluminium Industry—Indian Perspective

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<https://doi.org/10.71659/icsoba2026-xxYYY>

Abstract

The aluminium industry all over the world is rapidly changing due to the shift towards clean energy, lower carbon emissions, supply chain changes, and increasing demand from electric vehicles and data centers, renewable energy systems, infrastructure, and advanced manufacturing. In this changing scenario, India has become an important aluminium-producing country because of its large bauxite reserves and integrated production facilities. The domestic demand is rapidly growing because of India's boosting economy and major upcoming projects. India currently has a primary aluminium production capacity of about 4.3 Mt/a and ranks as the world's second largest producer of primary aluminium. Domestic demand is expected to reach 8.0–8.5 Mt by 2030, growing at a compound annual growth rate (CAGR) of 6.5–7.8 %. Although demand is increasing, aluminium consumption per capita remains below global average of approximately 12 kg/a, indicating considerable scope for future growth.

Several sectors are expected to support this expansion. Investments in electric transmission, renewable power generation, electric mobility, urban development, aerospace, packaging and digital infrastructure and increasing the need of aluminium products. International markets conditions also favour Indian producers. Production limits in China, the introduction of European Union Carbon Border Adjustment Mechanism (EU-CBAM), and rising demand for low carbon aluminium have created new opportunities for integrated aluminium manufacturers.

Despite these positive trends, several issues continue to affect industry's growth. Aluminium smelting requires large amount of electricity, making energy available and cost important factors for long term competitiveness. The industry must also address carbon emission requirements, transportation and logistic challenges, limited downstream integration, and growing imports value added aluminium products. Greater use of renewable energy, improved process efficiency, digital manufacturing technology, and circular economic practices will be essential for maintaining competitiveness in the coming years.

This paper examines the Indian aluminium industry and its future opportunities. It focuses on value-added products, green aluminium, recycling, Industry 4.0, and residue utilisation. The study also highlights the need for raw material security, green energy, CBAM preparedness, and stronger exports. The study concludes that India has strong potential to become a global hub for sustainable and value-added aluminium manufacturing.

Keywords: Aluminium industry, Bauxite reserves, Viksit bharat 2047, Red mud management, Green aluminium.