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"The Future of Aluminium Extrusion Lies in Quality, Automation, and Sustainability"

Sandeep Gupta
Co-Managing Director,
SUMEX – Sumangalam Aluminium Extrusions Pvt. Ltd.

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D.A. Chandekar
Editor

The geopolitical landscape of West Asia has undergone a seismic shift, leaving an indelible mark on the global economic fabric. While the peak intensity of the conflict has flickered toward a tenuous reduction, the structural damage to international trade remains profound. Economies worldwide have been dented by supply chain fractures and inflationary pressures. India, through strategic diplomacy and fiscal maneuvering, managed the rare feat of insulating domestic fuel prices from the worst of the volatility.

However, the non-ferrous metals and foundry sector could not escape the broader contagion. For aluminium, copper, zinc, and the intricate ecosystem of foundries, the conflict was not merely a distant political event but a direct disruption to the vital arteries of production and commerce. The vulnerability of the sector became painfully clear with the logistical chokeholds in the region, most notably the instability surrounding the Strait of Hormuz and Red Sea routes. For Indian non-ferrous producers and foundries, the Gulf serves a dual role: it is a primary reservoir for alumina, copper concentrates, high-grade scrap, and a cornerstone destination for cast components, extrusions, and alloy exports. The closure and constant threat to these maritime routes did more than just spike freight and insurance premiums; it physically severed the flow of raw materials and market access. Copper smelters faced shipment delays of blister and scrap. Aluminium alloy makers saw secondary ingot supply lines from the Middle East choke overnight. Foundries dependent on imported magnesium, nickel, and ferroalloys for specialized castings watched lead times double and costs soar. This double-edged sword — the strangulation of input and the stagnation of output — forced a sudden realization that the industry's traditional reliance on specific corridors requires an urgent, structural pivot to ensure long-term viability. The foundry sector, with its just-in-time patterns for automotive and engineering clients, absorbed the shock directly. A single delayed consignment of copper scrap or ferro-silicon could idle melting lines and breach delivery schedules, eroding hard-won customer trust.

Moving forward, the non-ferrous and foundry industry must internalize the harsh lessons of this era. The age of predictable globalization is being replaced by a gritty realism where "mutual interest" trumps historical alliances. This necessitates three pivots. First, a fundamental rethinking of raw material linkages. Over-dependence on any one geography for scrap, concentrates, or master alloys is now a board-level risk. Building domestic scrap collection networks, investing in urban mining, and securing long-term offtake from Africa, Latin America, and Australia must accelerate. For foundries, localized sourcing of recycled aluminium and copper, paired with in-house alloy standardization, reduces exposure.

Second, diversification of export destinations. While the Gulf remains vital, ASEAN, East Africa, and Eastern Europe offer growing demand for castings, rolled products, and foils. Export promotion must target sectors less tethered to oil-driven economies - EV components, renewables, and consumer durables.

Third, the search for technology suppliers and capital partners must now prioritize reliability and strategic alignment over mere cost-efficiency. Foundry modernization - from energy-efficient induction furnaces to low-pressure die-casting - cannot hinge on vendors vulnerable to the same choke points. Partners willing to localize spares, share IP, and co-invest during downturns will define resilience. In good times, every partnership flourishes; in times of crisis, only those built on shared strategic stakes survive. For India's non-ferrous and foundry sector to remain a global powerhouse, its new strategy must be forged in the fire of these challenges - building a future that is as adaptable and enduring as the metals it shapes.

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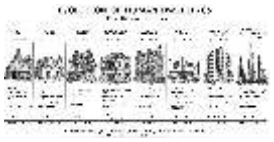

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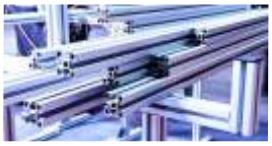

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"The Future of Aluminium Extrusion Lies in Quality, Automation, and Sustainability"

Sandeep Gupta
Co-Managing Director,
SUMEX – Sumangalam Aluminium Extrusions Pvt. Ltd.

THE INDIAN aluminium extrusion industry is witnessing steady growth, driven by increasing demand from sectors such as infrastructure, automotive, electrical, renewable energy, and industrial manufacturing. As the focus on lightweight, durable, and recyclable materials continues to grow, aluminium extrusions are becoming increasingly important across modern engineering and construction applications. At the same time, manufacturers are under pressure to improve quality, operational efficiency, and sustainability while adapting to rapid technological advancements.

In this interaction with Metalworld, Mr. Sandeep Gupta, Co-Managing Director of SUMEX – Sumangalam Aluminium Extrusions Pvt. Ltd., shares his perspective on the growth outlook for the extrusion sector, the role of automation and process optimisation, and the opportunities and challenges shaping the future of aluminium extrusion in India.

Q. The aluminium extrusion sector is witnessing growing demand from industries such as construction, automotive, electrical, and renewable energy. How do you see the current outlook and growth potential for the extrusion industry in India?

A. The outlook for the Indian aluminium extrusion industry is highly positive. Government initiatives such as infrastructure development, rapid urbanisation, electric vehicle adoption, and the "Make in India" programme are creating strong demand for high-quality aluminium extruded products across multiple sectors.

Sandeep Gupta is the Co-Managing Director of SUMEX - Sumangalam Aluminium Extrusions Pvt. Ltd., a leading aluminium extrusion company with over two decades of experience in manufacturing high-quality aluminium profiles. Under his leadership, the company has expanded its operations significantly, with a production capacity of 20,000 tonnes per annum across advanced manufacturing facilities in Medchal and Kondapur.

With a strong background in business management and strategy, Mr. Gupta has played an important role in strengthening SUMEX's focus on precision engineering, quality, customer partnerships, and operational excellence. He continues to drive the company's growth in the aluminium extrusion sector, catering to the evolving requirements of OEMs, fabricators, and industrial customers across diverse application segments.

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Industries are increasingly shifting towards lightweight, durable, and recyclable materials, and aluminium fits these requirements very well. This trend is opening new opportunities not only in domestic markets but also in exports. The sector is expected to witness strong growth in the coming years, along with significant investment and capacity expansion.

Q. Product quality, dimensional accuracy, and surface finish are becoming increasingly important in aluminium extrusion applications. What are the key factors that manufacturers must focus on to meet evolving customer expectations?

A. Today's customers expect consistent quality, precision, and reliability. To meet these expectations, manufacturers must focus on several critical areas, including high-quality billets, precision die design, process consistency, advanced quality control systems, and skilled manpower.

Dimensional accuracy and superior surface finish have become essential requirements, especially for applications in automotive, architecture, and engineering sectors. Timely delivery and consistency in production are equally important.

Adopting modern manufacturing technology and maintaining strict quality standards will be key to sustaining competitiveness and building long-term customer trust in the extrusion industry.

Q. Energy efficiency and sustainability are gaining importance across the aluminium value chain. What measures can extrusion companies adopt to improve operational efficiency and reduce environmental impact?

A. Energy efficiency and sustainability are becoming central priorities for extrusion companies. Manufacturers can improve operational efficiency by adopting energy-efficient machinery, process automation, waste heat recovery systems, and optimised production planning.

Increasing the use of recycled aluminium is another important step, as it significantly reduces energy consumption and environmental impact compared to primary aluminium production. Companies also need to focus on reducing material wastage and implementing efficient scrap management practices.

In the long term, sustainable manufacturing practices will not only help companies reduce costs but also strengthen their position in global markets where environmental compliance is becoming increasingly important.

Q. The extrusion industry is gradually moving towards greater automation and process optimisation. How do you see technologies such as digital process monitoring, advanced die design, and automated handling systems shaping the future of aluminium extrusion operations?

A. Automation and digital technologies will play a major role in shaping the future of aluminium extrusion operations. Technologies such as digital process monitoring, advanced die design, and automated handling systems can significantly improve productivity, precision, quality consistency, and cost efficiency.

Advanced monitoring systems allow manufacturers to track production parameters in real time, helping reduce defects and improve process control. Similarly, modern die design technologies improve dimensional accuracy and overall product quality.

Automation also helps reduce manual handling, improve operational safety, and optimise production flow. As competition increases, companies that adopt advanced manufacturing technologies will be better positioned to improve efficiency and maintain competitiveness.

Q. With increasing competition and rising input costs, what strategies are essential for Indian extrusion companies to strengthen their competitiveness in both domestic and export markets?

A. Indian extrusion companies need to focus on a combination of quality, cost optimisation, technology adoption, and customer-centric approaches to remain competitive.

Producing value-added products and maintaining high manufacturing standards will be critical for differentiating themselves in the market. Companies must also continuously invest in technology upgrades and process improvements to improve efficiency and reduce operational costs.

Strong customer relationships, reliable delivery schedules, and consistent product performance are equally important in building long-term market credibility in both domestic and export markets.

Q. Looking ahead, what opportunities and challenges do you foresee for the Indian aluminium extrusion sector over the next few years, particularly in the context of infrastructure growth, electric mobility, and industrial development?

A. The Indian aluminium extrusion sector has significant growth opportunities ahead, especially in areas such as EV structural components, solar and renewable energy applications, and value-added architectural and industrial profiles.

Rapid infrastructure growth, industrial expansion, and increasing focus on electric mobility are expected to create strong long-term demand for aluminium extrusions.

However, the industry will also face several challenges, including raw material price volatility, high energy consumption, growing global competition, and the continuous need for upgrades in technology, quality systems, and process efficiency.

Companies that focus on innovation, automation, sustainability, and operational excellence will be better positioned to capitalise on future opportunities and strengthen their market position.

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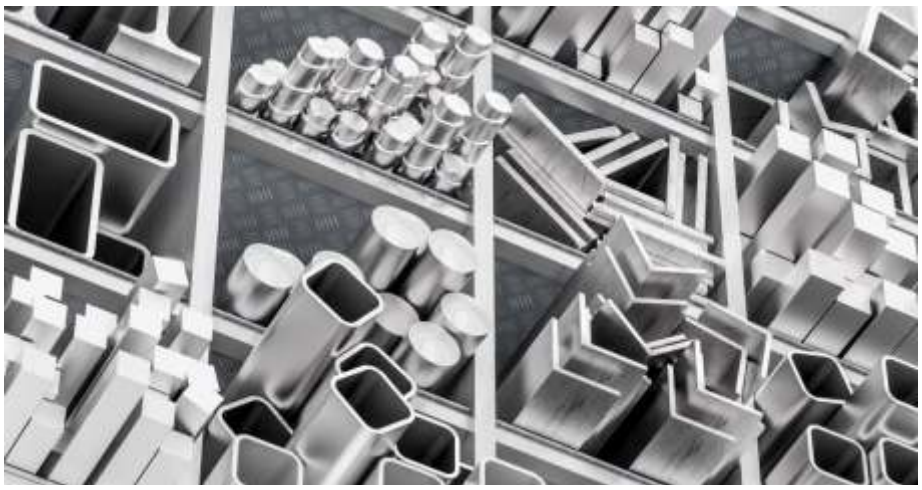

The Integration Imperative: How Engineered Aluminium Extrusions Are Reshaping Downstream Manufacturing

INDIA HAS BUILT A STRONG aluminium production capacity over the years. At the same time, the rising demand for engineered and application-specific aluminium components reflects a broader shift in focus: moving beyond material production towards greater value addition.

For years, a large part of the aluminium extrusion industry followed a simple model: form the metal, cut it to length, and ship the profile. The profile itself was treated as the finished product, while machining, fabrication, finishing, and assembly preparation were viewed as separate from the core value chain. That situation is now changing.

As industrial sectors become increasingly technology-driven, the downstream aluminium industry is shifting from profile manufacturing to engineered component manufacturing. Customers now expect aluminium solutions that are fabricated, machined, and ready for integration into larger systems. In this transition, extrusion is no longer the final product; it is merely the starting point.

What Aluminium Extrusion Actually Involves

To achieve a stable, high-precision profile, we must first choose the right press for the job. Only then can we calculate the ideal billet length and set the process parameters. This is not a one-size-fits-all industry; every unique geometry demands its own set of rules.

The precision of an extruded profile, particularly complex hollow cross-sections, is a direct result of balancing the dynamic variables of thermodynamics and kinematics. Metal flow behaviour is not static; it is a sensitive response to the interplay between billet temperature, alloy composition, and the extrusion press RAM displacement rate.

Maintaining consistent wall thickness requires more than just high-quality tooling. It demands real-time synchronisation of these factors to ensure the metal advances through the die bearings at a uniform velocity. If the temperature fluctuates or the RAM speed is mismatched to the alloy's flow stress, the resulting profile may suffer from dimensional instability or internal structural defects.

In the extrusion industry, the distinction between alloys such as 6061, 6082 and 6063 is far more than a numerical classification. It represents a fundamental shift in the metallurgical and thermodynamic requirements of the process. Each alloy possesses a unique flow stress profile that dictates the specific extrusion pressure required to achieve plastic deformation. Selecting the correct chemistry is a strategic decision that directly impacts the operational window, influencing everything from the maximum attainable press speed to the longevity of the tooling.

The distribution of alloying elements such as magnesium and silicon determines the grain structure, which in turn dictates the visual quality of the extruded products.

How Downstream Sector Demands Changed the Equation

The shift towards downstream aluminium manufacturing has largely been driven by evolving industrial requirements. Electric vehicle production, in particular, exposed limitations within traditional extrusion supply chains. Battery enclosures, crash management systems, and thermal management housings require far tighter tolerances than conventional architectural profiles, while also demanding consistent machinability across production batches. A supplier that can produce the extrusion but cannot support downstream fabrication often introduces inefficiencies into the customer's assembly process.

Solar infrastructure presented a different challenge: high-volume precision. Mounting systems and structural components must fit accurately across large-scale installations, where even minor

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dimensional inconsistencies can compound across thousands of connected assemblies.

Industrial automation systems must work within tight limits. The aluminium profiles used to build machine frames, precision frames, and linear motion systems must fit together accurately, which means that they must be manufactured to the exact required dimensions every time. When customers purchase these systems, they are not simply buying aluminium; they are relying on the consistency of the entire process, expecting it to function reliably, maintain precision, and perform over the long term. Industrial automation systems such as these must deliver consistent reliability over time.

Across industries, customer expectations have evolved in a similar direction. Buyers are no longer simply sourcing aluminium profiles; they are seeking engineered aluminium systems. The extrusion forms the foundation, but it is the downstream processing that ultimately determines the functionality of the final product.

Why Integration Has Become an Industry Requirement

A decade ago, many OEMs carried out in-house cutting, drilling, tapping, and secondary machining on aluminium profiles received from suppliers. At the time, this approach remained practical, as labour availability and downstream manufacturing capacity justified the additional investment.

Supply chains have since evolved.

Today, customers increasingly expect aluminium components to arrive nearly installation-ready, minimising the number of steps between procurement and final

assembly. As a result, downstream integration has shifted from being a competitive advantage to becoming an industry expectation.

The question is no longer whether a supplier can manufacture an aluminium profile to specification. Increasingly, the real requirement is whether that supplier can fabricate, machine, assemble, and finish the component in ways that integrate seamlessly into the customer's production system.

However, integration only creates value when processes operate in synchronisation.

When extrusion, CNC machining, fabrication, finishing, and logistics function within coordinated production planning systems, non-conformances are identified earlier, handover delays are reduced, and lead times become more predictable. Effective downstream integration is fundamentally a systems engineering challenge. Without synchronisation, integration risks becoming little more than multiple disconnected operations functioning under one roof.

Fabrication Is Becoming the Core Offering

Machining aluminium extrusions at production scale differs significantly from machining flat stock materials. Hollow sections and thin-walled profiles influence tooling behaviour, fixturing strategies, chip evacuation, and thermal response during machining operations. Managing these variables consistently requires specialised process expertise.

Yet the real value of downstream fabrication is realised at the customer end.

Profiles delivered pre-cut, pre-drilled, pre-tapped, pre-machined, and pre-finished substantially reduce the work required before assembly. This simplifies manufacturing operations, lowers internal processing requirements, and strengthens supplier relationships in ways that are considerably harder to replace than simply sourcing raw material.

The market is increasingly moving towards fabricated aluminium extrusions as engineered components rather than basic material inputs. Manufacturers that

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position fabrication as a core capability, rather than an auxiliary service, are likely to be better aligned with the direction procurement decisions are increasingly taking.

Precision Is Process, Not Inspection

Precision is rarely achieved through inspection alone. It is built through process control.

Dimensional accuracy depends heavily on die temperature stability, billet consistency, tooling precision, and press speed regulation. Final inspections may identify defects in limited production environments, but in high-volume manufacturing, they primarily separate acceptable output from rejected material.

Repeatability presents the more meaningful benchmark.

Achieving a tight tolerance once is manageable. Delivering that same tolerance months later, using the same tooling under changing production conditions, requires disciplined process management. People who build things using aluminium parts need to know that the parts they get later will work with the systems they already have.

This is particularly important in sectors such as aviation, defence, mobility, and electrification, where traceability is becoming increasingly essential.

In these industries, traceability is not only about maintaining records. It is also about ensuring that manufacturing systems operate with consistent quality and reliability. As a result, manufacturing systems are increasingly designed with traceability in mind, and aluminium components form a critical part of these systems.

Digitalisation and Efficiency in Modern Aluminium Manufacturing

Die management is a useful illustration of where digitalisation creates real operational value. A manufacturer running hundreds of active dies needs visibility into run history, cycle counts and dimensional performance over time. Without that, monitoring die condition becomes largely guesswork.

The same applies across extrusion, fabrication, anodising and logistics. Coordinated scheduling across interconnected processes reduces delays and keeps production stable. Quality data linked directly to process parameters makes continuous improvement possible rather than reactive.

On sustainability, the aluminium industry rightly talks about recyclability, but the more immediate operational impact is material efficiency. Die engineering that reduces scrap, wall thickness optimisation that achieves structural targets with less metal, and process discipline that improves yield are decisions with direct environmental consequences. These are also good manufacturing practices.

Where the Downstream Aluminium Industry Goes from Here

The extrusion manufacturers that dominate the next decade may not necessarily be the ones with the highest production capacities. The manufacturers that truly understand what their customers want and need are likely to be the ones that thrive. These companies will work closely with customers and offer more than just extrusion products. They will provide services that support the customer's broader manufacturing requirements, creating stronger long-term partnerships and differentiation beyond production scale.

This demands technical expertise along with manufacturing proficiency. This involves process discipline through die design, extrusion, fabrication, finishing, and logistics. Additionally, it demands a digital architecture to plan through a multi-process manufacturing scenario.

India's aluminium industry has the natural resources, manufacturing capabilities, and engineering expertise. What is currently being developed is the manufacturing intelligence to link them together and a business model to enable this integration rather than simply provide services.

Edited by: ***Jindal Aluminium Limited***

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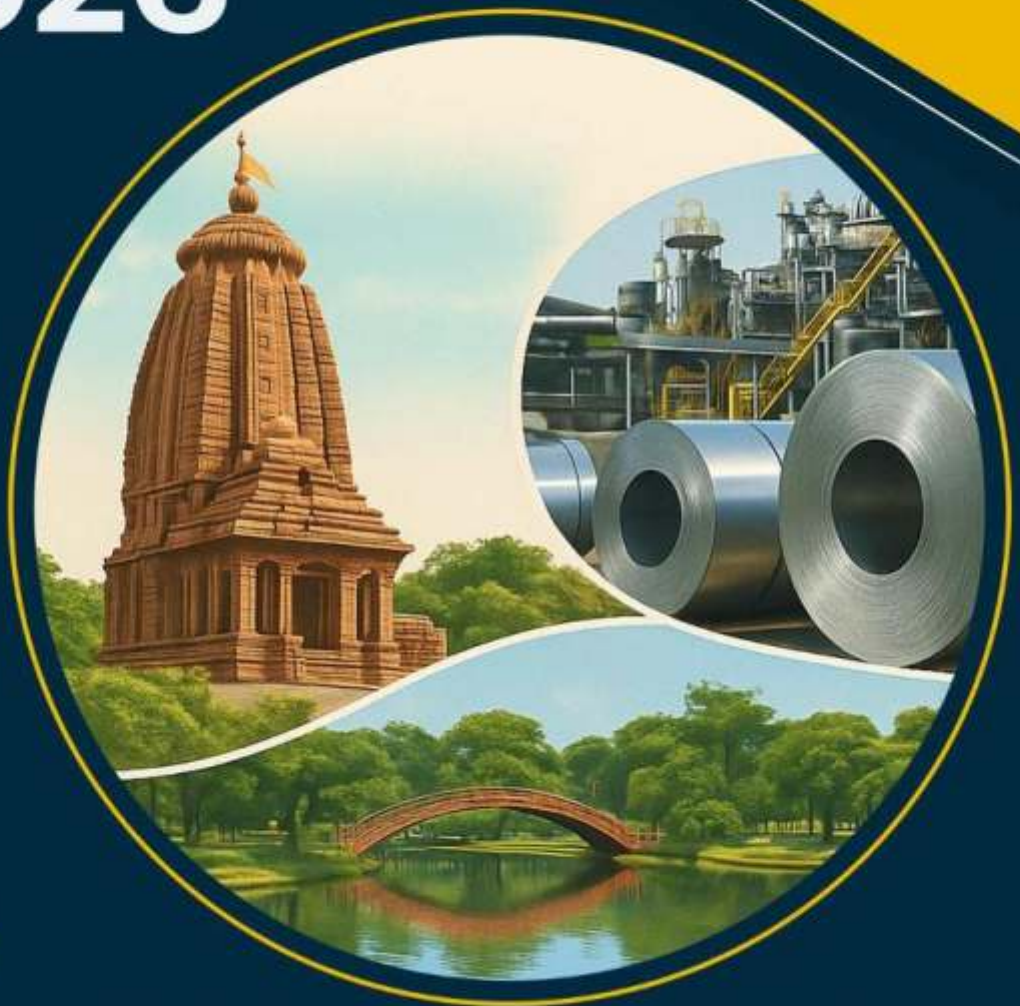

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Hindustan Zinc and Group Nirmal Partner to Establish Zinc Wire Facility at Rajasthan Zinc Park

HINDUSTAN ZINC Limited has signed a Memorandum of Understanding (MoU) with Group Nirmal for the establishment of a zinc wire manufacturing facility at the company's Zinc Industrial Park located at Khankhala in Rajasthan's Bhilwara district. The development marks another step in the expansion of downstream zinc manufacturing activities within the proposed industrial hub.

The proposed facility will manufacture zinc wire products using Hindustan Zinc's Special High Grade (SHG) zinc and will cater to applications across infrastructure, renewable energy, automotive, and industrial engineering sectors.

Zinc wire is widely used in thermal spray coating and metallising applications, where molten zinc is sprayed onto steel surfaces to provide corrosion protection. Such coatings are commonly used for bridges, transmission towers, railways, ports, pipelines, and industrial structures exposed to harsh environmental conditions. The process helps improve structural durability, extend service life, and reduce long-term maintenance requirements, making it increasingly relevant for modern infrastructure projects.

The collaboration forms part of Hindustan Zinc's broader strategy to develop an integrated downstream zinc manufacturing ecosystem in India focused on value-added applications and improved domestic supply chains.

The Zinc Industrial Park project was initially announced during the Rising Rajasthan Global Investment Summit in December 2024 by Rajasthan Chief Minister Shri Bhajan Lal Sharma alongside Vedanta Group Chairman Shri Anil Agarwal. The project is being developed in collaboration with the Rajasthan State Industrial Development and Investment Corporation (RIICO) and is intended to function as a dedicated downstream manufacturing hub linked to zinc raw material availability.

Strategically located near Hindustan Zinc's operations, the park is expected to support industries involved in galvanising, die-casting, zinc alloys, zinc oxide, battery materials, and other advanced zinc applications. The initiative is also expected to contribute to regional industrial growth, investment generation, and employment opportunities in Rajasthan.

Commenting on the development, Arun Misra, CEO and Whole-time Director, Hindustan Zinc, stated that Zinc Park represents a long-term effort to create a globally competitive and sustainable downstream zinc ecosystem in India. He noted that the partnership with Group Nirmal reflects increasing industry participation in zinc-based value-added manufacturing and corrosion protection solutions.

Under the agreement, Hindustan Zinc will provide raw material linkage support and broader ecosystem assistance for Group Nirmal's operations within the industrial park. Group Nirmal's experience in industrial manufacturing is expected to strengthen the downstream ecosystem and support growing demand for advanced corrosion protection technologies.

As infrastructure, transportation, renewable energy, and industrial sectors continue to expand, zinc-based corrosion protection solutions are expected to play an increasingly important role in improving asset reliability and sustainability. The partnership further reinforces zinc's growing significance in long-life infrastructure applications and downstream industrial development.

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Vedanta Expands AI and Deep-Tech Deployment Across Industrial Operations

VEDANTA GROUP has outlined its ongoing artificial intelligence (AI) and deep-tech transformation initiatives aimed at improving operational efficiency, safety, productivity, and sustainability across its businesses. Through its V-Spark DeepTech Ventures platform, the company expects to unlock an estimated USD 300–400 million in value over the next three years through large-scale deployment of intelligent industrial technologies.

Vedanta stated that its AI-led initiatives have already delivered significant returns through process optimisation, predictive maintenance, automation, and digital manufacturing solutions across mining, metals, oil & gas, and energy operations. The company continues to expand the use of technologies such as artificial intelligence, predictive analytics, Industrial Internet of Things (IIoT), machine learning, digital twins, industrial data platforms, and intelligent automation systems. These technologies are being integrated to improve production efficiency, optimise energy consumption, reduce operational costs, strengthen ESG performance, and enhance workplace safety.

Commenting on the development, Mr. Akarsh Hebbar, Chairman, V-Spark DeepTech Ventures and President, Vedanta Group, stated that AI and automation are becoming central to building globally competitive and future-ready industrial operations. He noted that the company is focusing on scalable technology deployment to improve operational performance, strengthen safety standards, and support sustainable industrial growth.

Vedanta also announced plans to engage with nearly 1,000 startups through the V-Spark platform to accelerate innovation in areas such as AI, industrial digitalisation, sustainability, and advanced manufacturing technologies. Across its operations, the company has already implemented several AI-enabled systems, including predictive maintenance platforms, AI-based thermal monitoring, intelligent energy management systems, advanced process analytics, and automated optimisation technologies.

As part of its digital safety initiatives, Vedanta has deployed more than 500 AI-enabled safety cameras across operations to improve real-time monitoring and workplace safety compliance. In mining operations, AI-driven fleet optimisation systems have helped improve haulage efficiency and reduce fuel consumption, while tele-remote mining technologies are supporting safer underground operations by reducing direct human-machine interaction.

Vedanta's digital manufacturing programmes have also contributed measurable operational benefits. According to the company, automated monitoring systems in smelter operations have generated value improvements, while Mine Excellence initiatives are expected to contribute significantly through process optimisation and intelligent operational controls.

The company is further integrating AI-enabled command centres, enterprise dashboards, and advanced analytics systems to improve operational visibility and decision-making across business units. In addition, AI-based systems are being introduced in procurement and supply chain functions to improve inventory planning, purchasing efficiency, and working capital management.

Through V-Spark DeepTech Ventures, Vedanta continues to collaborate with startups, technology firms, and innovation ecosystems to accelerate the deployment of emerging technologies across industrial operations. The initiative reflects the growing role of AI, automation, and digitalisation in transforming heavy industries and improving efficiency, sustainability, and competitiveness across the metals and mining sector.

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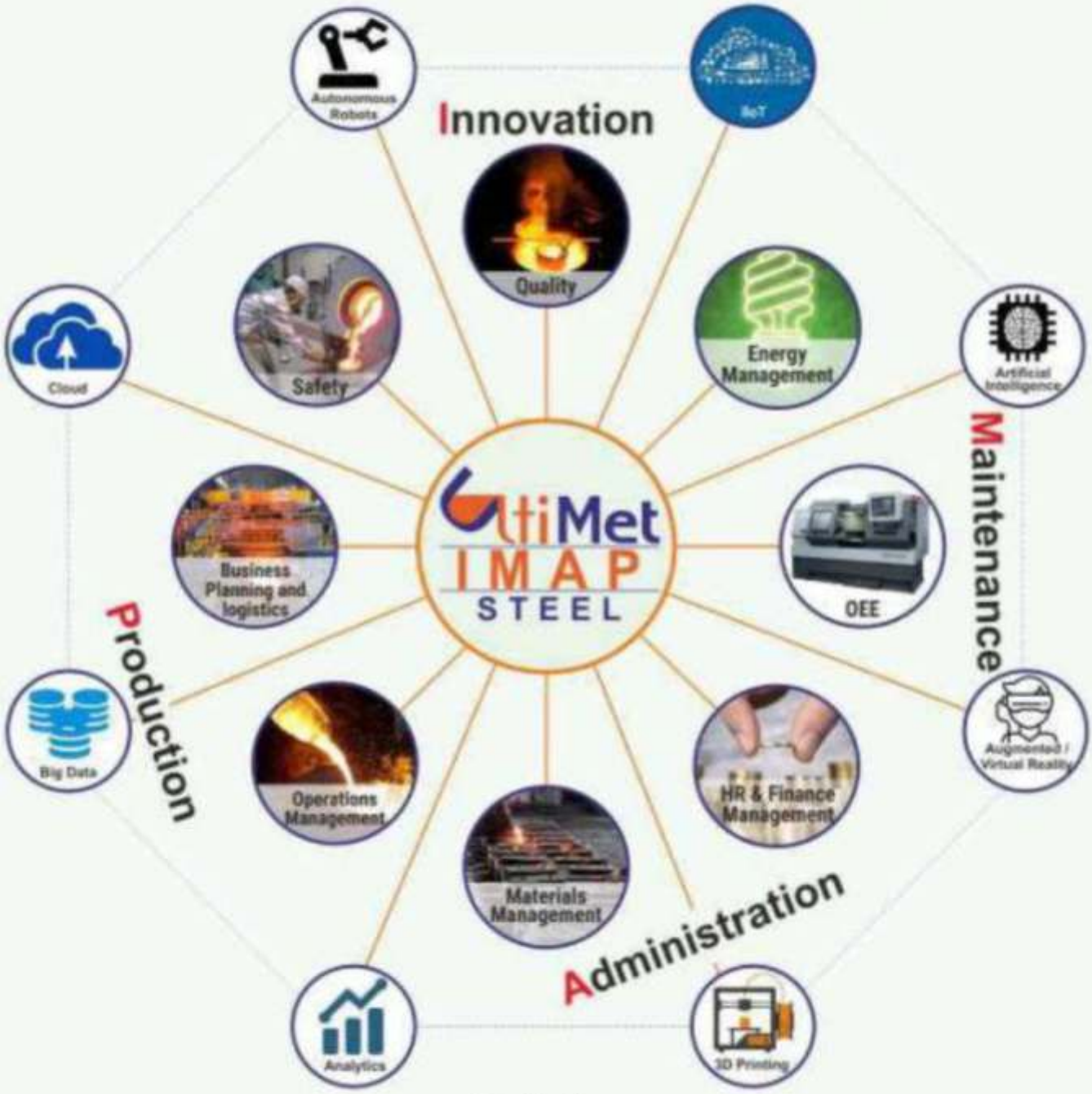

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FACE Raises Concerns Over Rising Aluminium Import Costs in Europe

Mario Conserva,
Secretary General – FACE

THE FEDERATION of Aluminium Consumers in Europe (FACE) has raised concerns over the growing financial burden on the European aluminium industry due to rising raw material costs and continued import duties on primary aluminium. According to the organisation, the increasing price of aluminium on the London Metal Exchange (LME) could push the additional cost burden on European industry to nearly €1.8 billion annually.

Commenting on the situation, Mario Conserva, Secretary General of FACE, stated that aluminium prices on the LME have approached €3,600 per tonne and are moving closer to the €4,000 level, significantly increasing cost pressures across the aluminium manufacturing value chain.

FACE noted that the current situation represents a substantial escalation compared to earlier assessments conducted jointly with LUISS University. At that time, when LME aluminium prices ranged between €2,300 and €2,500 per tonne, the additional cost burden associated with import duties on raw aluminium was already estimated to exceed €1 billion annually. According to the organisation, the continued imposition of import duties on primary aluminium-despite Europe's heavy dependence on imported raw metal-has become a structural disadvantage for downstream aluminium producers. FACE argues that the tariff effectively acts as an additional cost burden on processors and manufacturers while offering limited benefit to the wider downstream industry.

The association highlighted that Europe currently depends on imports for more than 85 percent of its primary aluminium requirements. At the same time, increasing volumes of aluminium scrap continue to leave the region, further intensifying concerns regarding raw material availability and supply security.

FACE also pointed to rising global competition, increasing energy costs, and geopolitical uncertainties as factors placing additional pressure on the European aluminium industry. According to the organisation, these challenges are being compounded by continued customs duties on imported raw aluminium, affecting competitiveness across the downstream sector, which accounts for a major share of the European aluminium value chain.

The federation has called for an immediate review of the current import duty structure, arguing that removal of duties on raw aluminium could help improve competitiveness, reduce cost pressures, and support long-term stability for the European aluminium manufacturing industry.

The issue highlights the broader challenges facing the global aluminium sector, where raw material security, energy costs, trade policies, and supply chain disruptions continue to influence industrial competitiveness and market stability.

Copper Prices Remain Firm Amid Strong Industrial Demand

GLOBAL COPPER prices remained firm during early May 2026 as steady industrial demand and infrastructure investments continued to support market sentiment. Demand from power transmission, renewable energy, electric mobility, and engineering sectors maintained strong consumption levels across major markets.

Commodity exchanges such as the LME and MCX witnessed active trading activity, with manufacturers closely monitoring price movements for procurement planning and risk management. Industry participants noted that stable copper demand from electrical and industrial applications helped offset concerns related to broader market volatility.

Analysts expect copper to remain one of the most strategically important industrial metals through 2026, supported by long-term electrification and infrastructure development trends.

Networking Steel & Metal Industry - Worldwide

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ILZDA International Conference on Galvanizing – Technology, Markets & Environment 11 & 12 May 2026, Raipur

INDIA LEAD Zinc Development Association (ILZDA)/Indian Galvanizers Association (IGA) organized the above conference with focus on Technology, Environment & Markets at Hotel Babylon Inn, Raipur during 11 & 12 May 2026. The conference was sponsored by M/s JSW Steel Coated Products Ltd (Platinum), Vijay Transmission Pvt Ltd (Gold), Tata Steel Ltd (Silver). Bronze Sponsors: Vankal Cables and Transmission Ltd, Jindal Steel Ltd and Rubamin Ltd., Brass Sponsors: Step Techno Solutions LLP, Metals & Technology Chemicals India Pvt Ltd., Jayaam Galvanizers Pvt Ltd, HL Galvatech Pvt Ltd, Topline Switchgear Pvt Ltd and Gimeco Impianti Italy.

Other supporters: M/s Unique Galvanizing Solutions Pvt Ltd (Badges), Western Technologies (Souvenir) and R R Ispat-A Unit of GPIL (Bag). Knowledge Partner: Multi Commodity Exchange of India Ltd; Cultural and Plant Visit sponsored by M/s Kalpataru Projects International Ltd.

Association Partners were International Zinc Association, International Lead & Zinc Study Group, Material Recycling Association of India and Recycling & Environment Industry Association of India. Media Partners: Steel & Metallurgy, MetalWorld, IIM Metal News, BigMint, Metal Trendzz and MMR.

Twenty seven technical presentations were made by overseas and Indian experts on 11th May and 12th May forenoon. The presentations covered Global outlook for Zinc, Use of galvanized steel in auto bodies, Innovations in JSW Group, Family of Zinc-coated steel sheets, Environmental regulations, Technology for general galvanizing, Current and future markets for galvanized steel etc., There were meaningful interactions by the audience with the speakers. About 185 delegates from India and abroad participated in the two-day event.

In the morning of 11th May 2026, Welcome Address was delivered by L Pugazhenthy, Executive Director, ILZDA, followed by the Special Addresses delivered by Dr Rahul Sharma, Director-India, IZA and Dr Dilip Boralkar, Former Member Secretary, Maharashtra PCB. The latest edition "ILZDA Directory of members & Buyers Guide 2026" was also released at the Inaugural Session.

At the Inaugural Session, Mr Sanjay Paliwal, Managing Director, M/s Vijay Transmission Pvt Ltd and Raghvendra Singh, Director, M/s Unique Galvanizing Solutions Pvt Ltd were recognized and honoured with "ILZDA Appreciation Award". "ILZDA Life Time Achievement Award" was conferred on Dr Shantanu Chakrabarty, Consultant and ex Tata Steel, due to his long and significant contributions to the galvanizing sector.

In the evening of 11th May, there was a Cultural event with light music by Abhishek Verma, followed by Networking and Gala Dinner.

Technical sessions on Environment & Recycling, Markets, Technology & Sustainability were conducted on 12th May 2026 which witnessed very informative technical presentations followed by meaningful discussions.

On 12th May 2026 afternoon, after lunch, the delegates were taken for a visit to the Raipur unit of M/s Kalpataru Projects International Ltd.

Dhirajlal K. Chauhan

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Exports Trends in Aluminium Extrusion Production

INDIA IS rapidly emerging as a major global exporter of aluminum products including extrusions, driven by robust manufacturing capabilities, rising demand for lightweight materials, and competitive pricing. As of May 2025, India ranked among top global exporters, with significant shipments to US, Germany, and Netherlands, seeing a 22% year-over-year increase in exports though recent 2026 reports indicate temporary production cuts due to supply chain disruptions in West Asia. India is strengthening its position as a global exporter of aluminum products, driven by rising demand in construction, automotive, aerospace and renewable energy sectors.

India's exports of Aluminum have quietly become one of the uncommon economic success stories that don't depend on good fortune. India has become one of the leading supplier of Aluminium, thanks to its robust production capacity, steadily increasing global demand and remarkably effective supply chain. The nation's export market is growing in industries from raw Aluminium to value-added goods.

India's Aluminium industry has established itself as reliable growth engine in the global market as industries seek lighter, stronger and more sustainable materials.

Major Aluminium export countries are China, Germany, Italy, Canada and U.A.E.

Major Aluminium importing countries are USA, China, Germany, Mexico, France, and Italy.

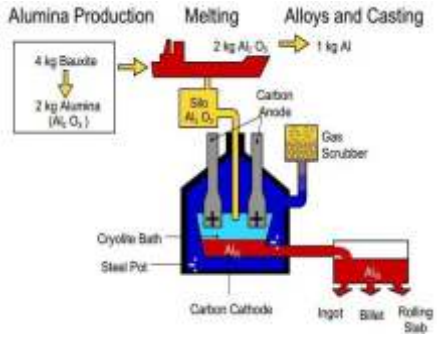


Figure 1: Aluminium Melting Plant

India aluminum extrusion market highlights:

The India aluminum extrusion market generated revenue of USD 2,076.2 million in 2024 and is expected to reach USD 3,718.7 million by 2030.

The India market is expected to grow at a CAGR of 10.3% from 2025 to 2030.

In terms of segment, shapes were the largest revenue generating product in 2024.Pipes & Tubes is the most lucrative product segment registering the fastest growth during the forecast period.

Figure 2: Aluminium Ingots

Aluminium Exports from India are shown in Table 1 below.

Aluminium Exports from India	Value/Figure
Total shipment between June 2024 to May 2025 (TTM)	31,518
Total shipments in May 2025	3713
Increase in shipments from April 2025 to May 2025	16%
Increase in shipments from May 2024 to May 2025	22%
India's rank and shipment	1st(1,14,372 shipments)
China's rank and shipment	2nd(5507 shipments)
Vietnam's rank and shipment	3rd(3335 shipments)
Countries receiving the majority of India's exports	U.S.A., Germany, Netherlands

Table 1: Aluminium export from India- 2025 Analysis

Figure 3: 1200 Tones Aluminium Extrusion Press

Key Export Trends (2025-2026):

Export Growth & Key Destinations: India has emerged as a major global exporter of aluminum products, with substantial shipments to the USA, Germany, and the Netherlands.

Growth Figures: Aluminum shipments in May 2025 showed a 16% sequential increase from April 2025 and a 22% rise year-over-year.

Top 10 Supplier to USA: In 2023, India secured a position among the top 10 aluminum suppliers to the United States with a 3.2% share.

Industry Focus: The sector, with an estimated 3.5 million tonnes per annum (MTPA) installed capacity, is heavily utilizing aluminum for sustainable and lightweight applications in construction, transport, and renewable energy.

Import/Export Imbalance: While exporting, India faces competition from cheap imports from ASEAN and Gulf countries, leading to a rise in demand for local production and a focus on "Make in India" initiatives.

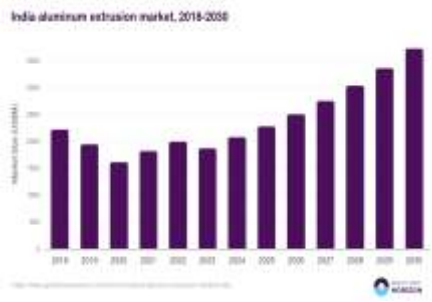


Figure 4: India Aluminium Extrusion Market 2018-2030

Other key industry trends: In terms of revenue, India accounted for 2.3% of the global aluminum extrusion market in 2024. Due to growing international demand, sophisticated manufacturing capabilities and a robust supply chain ecosystem, Aluminium export from India have become a significant growth engine in International trade. India has established itself as a dependable exporter to markets like U.S.A.,China, South Korea and Europe thanks to its growing production capacity, competitive pricing and constant quality.

Market Challenges and Projections:

Temporary Disruption (2026): Production has faced severe

disruption in early 2026 due to the West Asia crisis affecting raw material sourcing, with monthly output dipping.

Future Outlook: The market is projected to grow to 15, 80,869 tons by 2034, with a CAGR of 3.57% from 2026-2034, driven by urban infrastructure development.

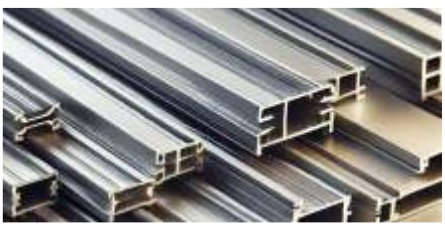
Product Diversification: The industry is moving beyond basic products, focusing on high-value and specialized extrusions for specialized sectors.

Production of Aluminium in India is about 6% of global production and it ranks as second largest producer. About 4.1 million tons of primary aluminium can be produced annually with an additional 2 - 2.2 million tons coming from secondary (Recycled) Aluminium.

Vedanta Aluminium is the largest producer of aluminum in India. It has major operations in Odisha and Chhattisgarh producing more than half of the country's Aluminium.

The surge in Aluminium exports from India isn't just a temporary spike, it reflects a deeper shift in manufacturing strength, technological upgrades and export oriented policy support with demand set to rise worldwide, Indian producers are capturing larger share of high- value markets and shaping long term global supply dynamics. If current trends continue, India's Aluminium export industry is on track to remain key contributor to both global growth and the country's economic momentum.

Major Aluminium producing states of India and their share of production is shown below.



Rank	State	Approximate % share in national production
1	Odissa	49%
2	Chhattisgarh	8%
3	Uttar Pradesh	8%
4	Maharashtra	8%
5	Jharkhand	9%

Table: 3 Major Aluminium producing states in India.

There are 3 Indian companies (including subsidiary) out of 10 Major Aluminium Exporting companies as seen In the Table 6 below:

Conclusion: Thus, we can see that Indian Aluminium industry has a very bright future due availability of raw materials (Bauxite), robust manufacturing base, well established supply chain and good support from Government and competitive pricing.

Market revenue in 2024	USD 2,076.2 million
Market revenue in 2030	USD 3,718.7 million
Growth rate	10.3% (CAGR from 2025 to 2030)
Largest segment	ShapesPipes & Tubes
Fastest growing segment	2018 - 2023
Historical data	

Table 4: Aluminum extrusion market data book summary

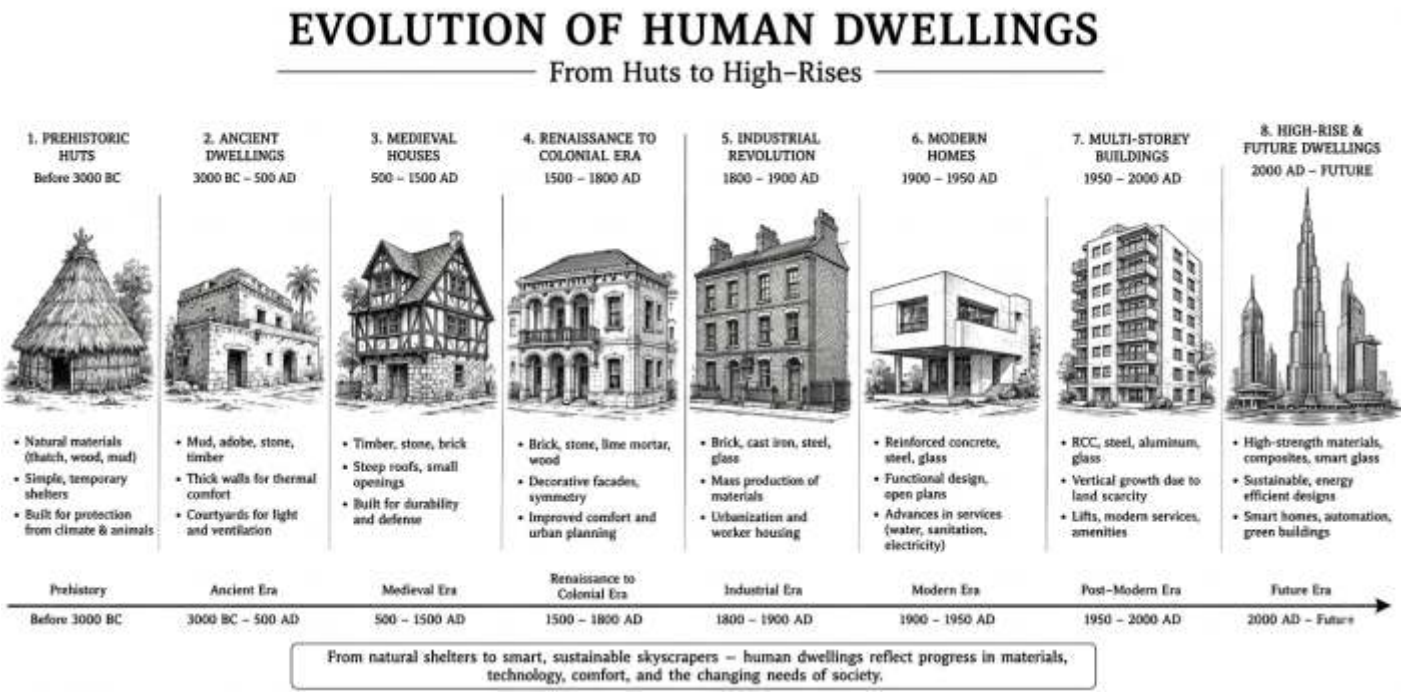
Rank	Aluminium export companies	Export value (Billion- USD)	Approximate % of World Exports
1	China	33.3	~15.8
2	Germany	17.7	~8.8
3	United states	13.1	~6.5
4	Canada	12.5	~5.7
5	Italy	8.69	~3.9
6	U.A.E.	8.6	~3.9
7	South Korea	7.9	~3.6
8	Netherlands	7.7	~3.5
9	Russia	7.3	~3.3
10	Japan	6.9	~3.1

Table 5:

Rank (By production output)	Name of the Company	Country
1	China Hongqiao Group	China
2	Aluminium corporation of China	China
3	Rusal (UC Rusal)	Russia
4	Rio Tinto Alcon	U.K./Australia
5	Emirates Global Aluminium E.G.A.	U.A.E.
6	Vedanta Aluminium Limited	India
7	Norsk Hydro ASA	Norway
8	Alcoa Corporation	United States
9	Hindalco Industries Ltd.(Aditya Birla Group)	India
10	Novelies (Subsidiary of Hindalco)	United States

Table 6: Major Aluminium Export Companies

Top 10 Aluminium exporting countries (Based on 2023 Trade Statistics)



In the Wonderland of Materials Technology: Part 3:

Advances in Construction Materials for Building Applications

Sadguru Kulkarni

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THE CONSTRUCTION sector is one of the largest consumers of raw materials globally and a major driver of economic development.

Materials such as cement, steel, non-ferrous metals, bricks, wood, and glass have formed the backbone of building and construction activities (B&C) for over a century. However, rapid urbanization, sustainability concerns, and performance requirements have triggered a transformation in construction materials. The reasons for transformation are multiple, for example:

- Typical concrete sab setting time used to be three weeks, with strict intermittent watering in order to ensure the formation of appropriate crystal structure and phases. The luxury of such a long setting time being no more available, techniques for rapid setting concrete had to be developed to facilitate fast construction.

- Building exterior materials have changed from simple lime-wash to paints, functional paints with add-on properties such as anti-microbial paints, ultra-white paints with high solar reflectivity, weather-proof cement paints, rapid-drying paints, decorative paints, textured paints with three-dimensional effects, aluminium composite panels, etc. This has been led by technical advances in surface coating technologies, as well as rolling mill technologies which facilitated making of thinner, cost effective aluminium foils coupled with polymer-coating technologies which facilitated corrosion resistance and enhanced adhesion.

- Evolving needs of human dwellings and associated

constructions has been a driver for technology in B&C; and technologists have rapidly adapted the developments in other areas of science, engineering and technology to make advances in B&C sector. In recent years, needs for enhance life cycle performance of buildings, towers and bridges, shortage of materials for construction, pressures on time & cost of construction, and global compulsions of sustainability on account of climate change have been the drivers of some of the developments in B&C.

This article aims to capture how the building and construction sector has evolved and contributed to materials technology over the decades making it an interesting field in the wonderland of Materials Technology.

Concrete alone is the most widely consumed man-made material in the world, and recent advances aim at improving strength, durability, sustainability, and lifecycle performance.

The evolution of construction materials & technologies can broadly be classified into:

- Traditional materials (cement, bricks, timber, steel)

- Improved conventional materials (RCC, high-performance concrete)

- Advanced and emerging materials (composites, polymers, smart materials)

- Developments in technology and how these technologies are impacting B&C

- Pressures from clean technology needs, circularity, energy optimisation, speed & time management.. and how these are driving material technologies in B&C.

This article traces this evolution, highlights current advances, and examines the future trajectory of construction materials in building & construction industry.

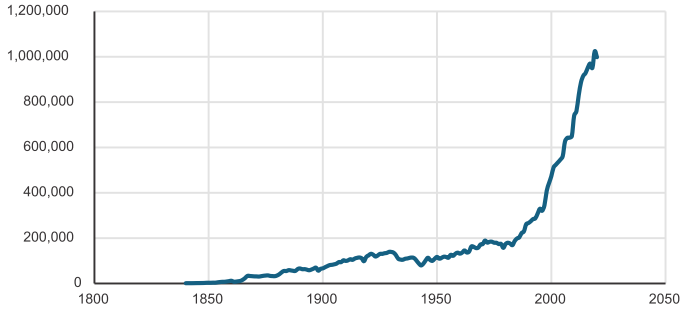
Traditional Construction Materials: Overview and Limitations

Cement and Concrete:

Traditionally, natural minerals with hardening properties , such as calcined limestone, natural gypsum, and semi-processed mud made into bricks were used to create man-made structures. Natural stones cut into shapes along with wooden shapes were used to functionalise the walls of these dwellings. The addition of volcanic ash to these materials was found to impart superior setting properties and hardness to make a natural binder for stones. Modern "Portland cement" was invented in 1824 by Joseph Aspdin, a British bricklayer, who patented a process of heating limestone and clay, then grinding it into a powder, naming it for its resemblance to building stone from the Isle of Portland. Concrete, made from cement, aggregates, and water, that provided a cost-effective, convenient, mouldable and transportable binder for stones and bricks has been the dominant structural material since the late 19th century.

With the advent of metallurgy, the use of supporting materials such as wood & timber to compliment the use of cement and bricks started. The real breakthrough came by combining the properties of concrete and steel. French gardener Joseph Monier and agriculturalist Joseph-Louis Lambot (1848-1867) combined concrete with steel wire mesh to enhance the performance of either. François Coignet (1853–1855): First to use iron-reinforced concrete for housing, designing a four-story structure in Paris and William Wilkinson (1854) applied for the first British patent for combining concrete with iron bars for building construction. This was developed further by François Hennebique (1892) to introduce the steel in bar/rod form to make structures with properties superior to both ingredients- concrete and steel- this was the invention of reinforced cement concrete, which became the standard for modern, large-scale construction. Towards the end of the nineteenth century appearance of tall structures and buildings made up of steel and RCC started- leading to sixteen storey, sixty four meter tall concrete sky-scrapper named as Ingalls Building in Cincinnati-USA; Eiffel tower- three hundred & thirty meter tall steel super-structure in Paris, France; Hennebique's technique for monolithic RCC structures for extra long pillars and beams which facilitated the constructure of bridges lead by Grafton Bridge- the longest single span RCC arch bridge in New Zealand; Tunkhannock Creek Viaduct (800 m span) in Pennsylvania; The Alvord Lake Bridge in San Francisco, USA (8.8 m span, 19.5 m total width, 1906); making the use of twisted bars ('Torr steel') for the first time.

Technical developments in reinforced cement concrete technology can be seen in terms of the number of patents:



USA Patent Applications - Design, Plant, applications - 1840 - 2020

- In the first decade of the twentieth century, a total of 391221 patents were filed in US

- By the end of the century (2000), 295926 patents were filed during the year alone.

Cement-concrete technology happens to be one of the most active areas in patenting)in USA), covering materials, applications, utilities and plant improvements, as can be seen from the chart: *(previous page)*

It is evident from the patent trend data shown above that inventions and innovations in multiple aspects of B&C are taking place over the years, with a sharp increase post 2000. What are these aspects?

Important technology areas in cement & concrete in last few decades

The last three decades (roughly 1995–2025) have transformed cement and concrete technology more than any period since the invention of Portland cement. The major drivers have been:

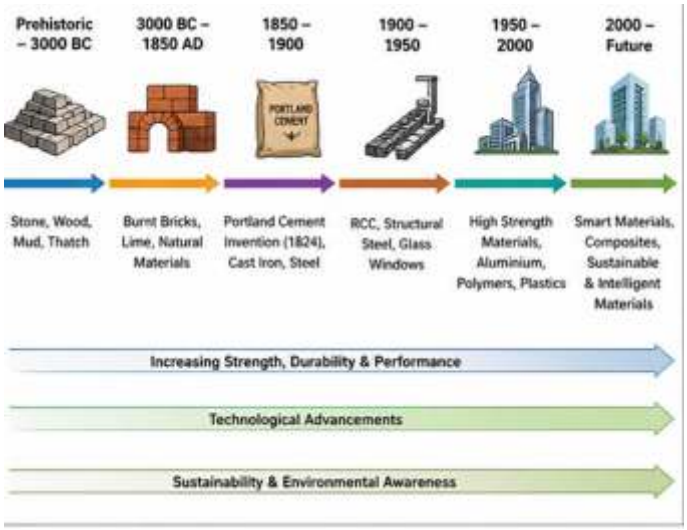
- Higher strength and durability requirements

- Faster construction

- Global warming, Sustainability and Greenhouse gas reduction

- Digitalization and automation of cement/concrete manufacturing and of the construction technology.

- Longer service life with lower maintenance



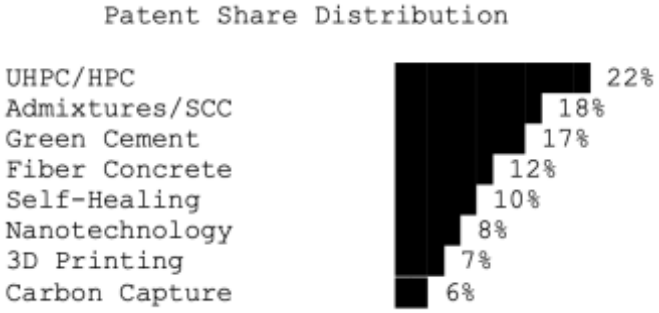
Evolution of materials & technology in B&C

Materials used in construction have evolved over the years, from traditional to smart as shown in the figure:

The following table summarises the main technology developments that have had the greatest technical and commercial impact.

Analysis of patents related to construction shows which are the important, developing areas of technology covered by the patents.

Technology	Main Benefit	Major Impact
High Performance Concrete	Strength + durability	Tall buildings, bridges
Self Compacting Concrete	Faster placement	Labor reduction
UHPC	Extreme performance	Long-life infrastructure
SCMs	Sustainability	Reduced cement usage
Green Concrete	Lower CO_2	Net-zero construction
Advanced Admixtures	Workability control	Modern mix design
Fiber Reinforced Concrete	Crack resistance	Toughness improvement
Self-Healing Concrete	Autonomous repair	Lower maintenance
3D Printed Concrete	Automation	Rapid construction
Smart Concrete	Monitoring + AI	Predictive maintenance



The technology areas are discussed below:

High-Performance Concrete (HPC) and Ultra HPC

One of the most important advances has been the development of concretes with very high strength, durability, and low permeability.

- Typical characteristics of HPC are: Strengths above 60–100 MPa and 120-200 MPas for Ultra-HPC (vs conventional concretes at 30-50 Mpas);

- Very low water-cement ratio: Conventional concrete generally uses a water-to-cementitious materials ratio between 0.40 and 0.55, while High-Performance Concrete operates at a much lower ratio, typically between 0.15 and 0.25. This lower ratio, combined with high-range water-reducing admixtures, is a primary driver of UHPC's extreme strength and durability

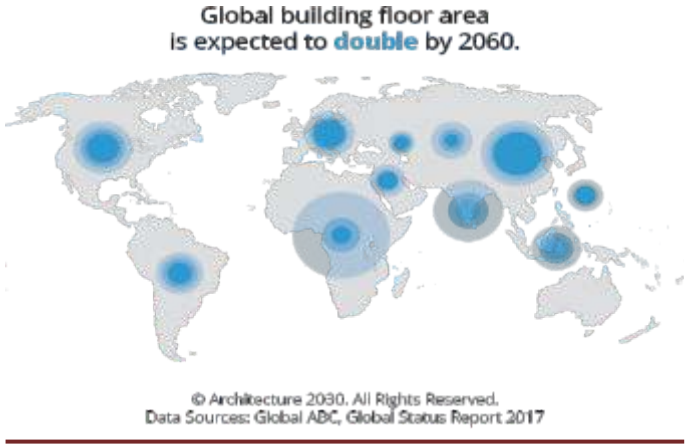
- Improved resistance to chlorides, sulphates, and freeze-thaw attack

These superior characteristics are obtained through the enabling technologies for incorporation of new and novel materials available, such as Fumed Silica, Fly ash, Smelter Slag cement and advanced superplasticizers. Fumed silica is an extremely fine, fluffy, white, amorphous powder of synthetic SiO2 with fine particle size and high surface area. It acts as universal thickening agent, by by forming a 3D hydrogen-bonded network in liquids to increase viscosity and thixotropy; and can work as a

reinforcing filler and viscosity enhancer to reduce dripping. Fly Ash, which is a waste product of coal-based power plants, is pozzolanic (i.e. Volcanic) material rich in silica and other inorganics, in the form of uniform spherical reactive particles with a low enthalpy of reaction. The incorporation of fly ash at predetermined levels helps in enhancing the concrete performance, reducing water demand & setting time, and improving strength. The use of fly ash in concrete has been a boon to both B&C and power generation helping reduce a critical environmental burden, and improving the economics of power plants. Similarly benefits are imparted by slag, which is a waste product of metal smelters. The metal component of slag also adds to the impact strength of concretes. Superplasticizers are novel polymeric chemicals, designed to control the rheological properties of concrete slurries. Admixture chemistry has thus contributed a lot to the innovations in B&C. These include: PCE superplasticizers, Shrinkage reducing admixtures, Corrosion inhibitors, Air entraining agents, Set retarders and accelerators, Rheology modifiers.

Such advances in concrete have facilitated the construction of hitherto unforeseen structures such as Long-span bridges, High-rise towers, Marine structures. Nuclear plant structures. 'Burj Khalifa' – the tallest building in the world as of today was made possible only through the advances in concrete technology.

Green / Low-Carbon Concrete: Sustainability has become the dominant theme of the last decade for all industries and B&C is not an exception. The B&C industry is estimated to contribute 7–8% of global CO_2 emissions and hence decarbonization has become a major technological focus area. By moderate estimates, the global constructed building area is slated to double over the next thirty years.



The building and construction sector is a leading contributor to climate change, responsible for roughly 37%–39% of total global energy-related CO_2 emissions. These emissions stem from two main sources: operational emissions (heating, cooling, lighting) and embodied carbon (production, transport, and assembly of materials).

Concrete technology was central to the construction of the 828-meter Burj Khalifa, utilizing over 330,000 m³ of specially formulated High-Performance Concrete (HPC) and Self-Consolidating Concrete (SCC) to withstand immense gravity, lateral wind loads, and extreme Dubai temperatures. Innovations included pumping concrete to a record-setting height of 601 meters and using refined mix designs to manage, creep, shrinkage, and curing in desert conditions.

Main technology components used in Burj Khalifa are:

High-Performance Concrete (HPC): Used for strength and durability, with structural walls reaching cube strengths of C60 to C80.I; the high modulus facilitated the tower's rigidity, and reduced cross-sectional area of vertical elements.

Self-Consolidating Concrete (SCC): Used extensively for its ability to flow and fill complex forms without segregation or vibration, which was critical for heavily reinforced, thin-walled sections.

Record-Setting Pumping Technique: A specialized, high-pressure pumping system was developed to deliver the concrete mix to a vertical height of 601 meters, which was necessary to meet the 3-day cycle time for each floor.

Thermal Management and Curing: To prevent cracking in extreme heat, concrete was often poured at night, with ice added to the mix. This allowed the mix to set at lower temperatures, managing the high ambient heat in Dubai.

Foundation System: The tower rests on a 3.7-meter thick concrete raft, supported by 194 piles bored to a depth of over 45 meters, ensuring stability in the ground

Ref: Wikipedia-Burj Khalifa

Operational Carbon (28%) Emissions generated during the daily operation of buildings, including heating, cooling, lighting, and power. This remains the largest portion of building-related emissions, driven by energy inefficiency.

Embodied Carbon (9-11%) Emissions produced throughout the construction lifecycle, including raw material extraction, transportation, manufacturing, and on-site construction processes.

Tertiary emissions generated during the manufacture of the key input materials for B&C (Cement, steel, glass and aluminium are responsible for a massive portion of embodied carbon. These contributions need to be factored as they have a lifelong impact.

From overall sustainability viewpoint, the solid waste generation and liquid effluent/sewage generation from B&C during construction and life cycle use are important; however these are not addressed in this paper.

Futuristic Vision of B&C Activity

Various approaches have been followed to mitigate the sustainability impact of B&C. These include: Energy Efficiency: Upgrading existing building envelopes and switching to renewable energy sources for building operations; Material Innovation: Investing in low-carbon alternatives, such as green steel, sustainable concrete mixtures, and timber; and Circular Economy: Shifting toward building reuse and retrofitting rather than demolition to save between 50% and 75% of embodied carbon.

Fiber Reinforced Concrete (FRC)

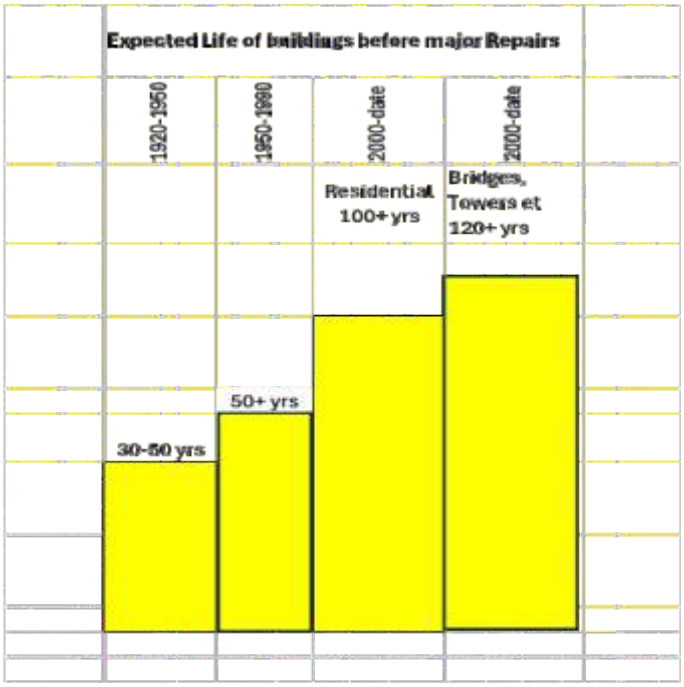
While steel rods for reinforcement has been established for over a century, search for other reinforcing material has been a subject of significant interest in recent years. Short fibers are increasingly used to improve tensile behavior and crack control in concrete. The materials used include: Steel fibers, Glass fibers, Polypropylene fibers, Basalt fibers, Carbon fibers.

Fibre-reinforced concrete Blocks

The application to date is selective to impart benefits such as reduced cracking, improved toughness, better fatigue resistance, Improved impact resistance and include applications such as industrial floors, tunnel linings, shotcrete, airport pavements, earthquake-resistant structures

Self-Healing Concrete:

These approaches have lead to a significant increase in the expected life of concrete structures before the need of a major repair, as can be seen from the figure below:



As a parallel approach, technology for self-healing concrete has also advanced for autonomous repairs of cracks. The technologies include:

- Bacteria-based healing

- Encapsulated polymers
- Mineral precipitation systems
- Crystalline additives

Conceptually, these techniques aim for in-situ generation of fine crystals of calcium carbonate in the cracks so as to fill and seal the cracks. This leads to Longer service life, Reduced maintenance, Better watertightness and Reduced lifecycle cost

3D Printed Concrete Construction

Concrete 3D printing is emerging as one of the most disruptive technologies in construction.

The advantages are: Reduced labor, Enhanced speed of construction, Lower material waste, Architectural flexibility, Automation compatibility and most extreme customisation. Borrowed from conventional 3D printing, this technology aims to utilise special rheology-controlled concrete, Rapid setting behaviour and Robotic deposition systems. It is still at early, experimental stage and is slated to cause a major disruption as well as drive technology generation for new materials and techniques.

Conclusion

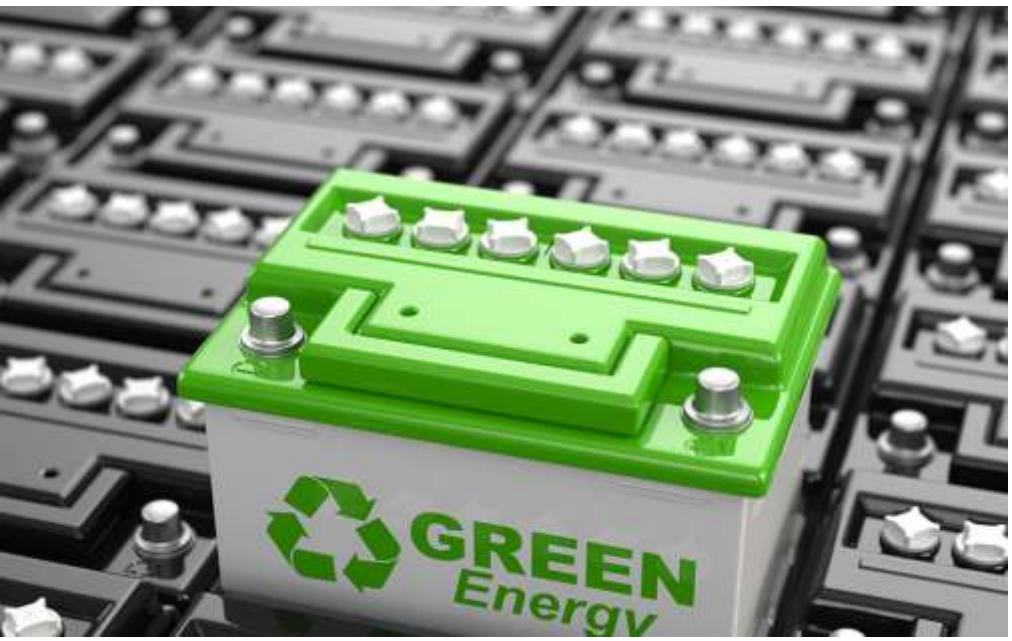
Dwelling is the third most important need of humans and building and construction has been a sector that has grown with the advent of humans over the years.

The evolution of construction materials reflects a shift from mass, strength, and cost toward performance, sustainability, and intelligence. Traditional materials like cement, steel, and wood remain fundamental, but their enhanced versions and new alternatives are redefining construction.

The next fifty years will likely witness:

- Radical improvements in material efficiency
- Integration of digital technologies
- Rapid and sustainable construction practices

Construction materials will no longer be passive elements but active contributors to structural performance, energy efficiency, and environmental sustainability. Through this B&C also becomes a major contributor to the material science & technology, offering an exciting tour in the Wonderland of Materials Technology.



Battery EPR ETP: What Producers Should Expect Once Trading Goes Live

Bhuwan Purohit
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Rubamin Pvt Ltd.

INDIA'S BATTERY EPR ETP platform is unlikely to behave like a traditional commodity market during its initial phase. Instead, it may resemble an oversupplied carbon-credit or REC market during surplus years, characterised by weak liquidity, aggressive undercutting, and strong buyer control.

The present EPR ecosystem already reflects several structural realities:

- Fake EPR generation exists due to limited regulatory controls.

- EPRs across metals are trading below statutory minimum prices.

- Most producers delay purchases until the end of the compliance year.

- Recyclers seek floor pricing, but competitive pressure forces continuous undercutting.

- Significant carry-forward inventory of EPR certificates already exists from previous years.

Likely Trading Mechanism

The proposed ETP structure is expected to operate through anonymous trading, automated matching, and lowest-price priority, with FIFO preference for certificates nearing expiry.

Such a framework may eliminate relationship-based pricing and negotiated deals, creating a highly competitive compliance market where price becomes the primary differentiator.

Expected First-Year Market Behaviour

In the first year, recyclers are likely to spend much of the time accumulating inventory while competing for limited trades. Concerns around ageing inventory and certificate expiry could lead to continuous price reductions.

This may create a structurally deflationary market environment.

Behaviour of Market Participants

Producers: Most producers are expected to delay procurement, wait for distressed pricing opportunities, and target purchases near floor-price levels.

Recyclers: Recyclers, meanwhile, may seek floor pricing but face pressure from liquidity requirements and inventory risks, forcing them to compete aggressively on price.

This could create a strong temporary advantage for producers.

Could Prices Stay Near Floor Levels?

During the initial year, even metals such as lithium and cobalt may struggle to sustain significant premiums over floor prices.

For the first nine months, most metals are likely to trade close to floor-price levels due to weak liquidity and limited buyer urgency. During the final quarter, particularly from December to March, compliance-driven buying may temporarily increase prices. However, large inventory availability could quickly suppress premiums.

Strategic Outlook for Producers

For producers, the most effective strategy may not simply be waiting until the final quarter. A more balanced approach could involve:

1. Securing partial volumes during weaker pricing periods in Q1–Q3

2. Avoiding complete dependence on last-minute procurement

3. Closely monitoring CPCB enforcement and regulatory tightening

If traceability systems, capacity verification, and audit mechanisms strengthen over time, metals such as lithium, cobalt, and nickel could gradually evolve into more strategic compliance assets.

High-Precision Expansion Reshapes Industry Growth

EVEN AS traditional segments struggle, a technology-driven shift toward high-precision manufacturing is redefining growth in India's aluminium extrusion industry. In 2026 it is witnessing a parallel trend of technological advancement despite broader market volatility. One of the most significant developments is the shift toward high-precision expansion, with manufacturers investing in advanced systems to produce complex, high-tolerance components for modern industrial applications.

High-precision aluminium extrusion involves producing profiles with highly accurate dimensions, tighter tolerances, and superior surface finishes. These capabilities are increasingly essential in sectors such as electric vehicles (EVs), aerospace, renewable energy, robotics, and advanced construction, where performance depends on precision and consistency.

Driven by demand for lightweight and high-strength materials, manufacturers are upgrading facilities with computer-controlled extrusion presses, automated die systems, and real-time quality monitoring technologies. These innovations enable the production of complex profiles with minimal defects, reduced waste, and improved efficiency.

This shift is particularly relevant as industries like EV manufacturing and solar energy require specialized aluminium components. EV battery enclosures and thermal systems depend on precision-engineered extrusions, while modern architecture demands slimmer and more refined profiles.

While traditional extrusion segments continue to face challenges from rising costs and supply disruptions, the high-precision segment is expanding more rapidly. Companies investing in advanced capabilities are gaining a competitive advantage, even in a difficult market.

However, the transition requires significant capital investment, creating a gap between large manufacturers and MSMEs. Larger firms are better positioned to adopt new technologies, while smaller units face financial constraints.

Overall, high-precision expansion is emerging as a key driver of growth, shaping the future of the aluminium extrusion industry.

Industry Support and High-End Shift Drive Next Phase of Growth

INSTITUTIONAL BACKING and a clear shift toward value-added manufacturing are strengthening India's aluminium extrusion sector, reinforcing its long-term growth outlook. A key development in this direction is the initiative Aluminium Bharat 2026, launched by the Aluminium Extrusion Manufacturers Association of India (ALEMAI) to strengthen domestic manufacturing capabilities under the broader Atmanirbhar Bharat framework. This initiative aims to enhance self-reliance by reducing import dependence, promoting indigenous production, and creating a more integrated value chain within the country. It also focuses on improving industry standards, encouraging innovation, and supporting small and medium manufacturers in scaling up operations.

Alongside policy and industry body support, companies are increasingly adopting strategic partnerships to remain globally competitive. Collaborations with technology providers, global manufacturers, and downstream industries are enabling access to advanced production techniques, improved efficiency, and better quality control. These partnerships are also helping Indian firms align with international standards and expand their export potential.

A notable trend emerging from this shift is the industry's growing focus on high-end applications. Instead of concentrating solely on conventional products, manufacturers are moving toward value-added segments such as precision engineering components, automotive parts, renewable energy systems, and advanced construction solutions. This transition is improving margins while also strengthening India's position in global supply chains.

Fuel Shortage Triggers Shutdowns and Sharp Production Fall

A SUDDEN fuel crunch has brought sections of India's aluminium extrusion industry to a standstill in 2026, forcing widespread shutdowns and disrupting production cycles across major industrial hubs. Aluminium extrusion, an energy-intensive process used in construction, automotive, solar energy, and industrial applications, has seen a sharp decline in output as factories struggle to maintain stable operations.

The primary cause of this crisis is a sudden shortage of industrial fuels such as LPG and piped natural gas (PNG), both essential for operating high-temperature extrusion furnaces. Supply disruptions linked to geopolitical tensions in West Asia have reduced fuel availability, leading to production halts and shorter operating cycles. In several regions, plants have been shut for extended periods, while others are operating at reduced capacity.

Industry estimates indicate that production has dropped by nearly 40–50%, with several units completely shut and many operating at only half capacity. This has created serious financial pressure, particularly for small and medium-scale enterprises that depend on continuous production to remain viable. The decline has also disrupted supply chains and reduced overall monthly output.

The effects are being felt across downstream industries. Construction projects are facing delays, automotive manufacturers are dealing with shortages, and solar installations are slowing due to limited availability of aluminium components. Rising fuel costs have further increased operational expenses, making production less profitable even when fuel is available.

In response, industry bodies are seeking government support, including loan restructuring and working capital assistance. Meanwhile, companies are exploring energy-efficient technologies, alternative fuels, and localized supply chains to improve resilience and ensure long-term stability.

Aluminium Extrusion Industry Faces 40–50% Production Drop in 2026

INDIA'S ALUMINIUM extrusion sector is witnessing a sharp contraction in 2026, with output levels falling by nearly 40–50% across key manufacturing clusters. This decline marks one of the steepest slowdowns in recent years, raising concerns across construction, automotive, and renewable energy supply chains.The slowdown reflects a mix of global disruptions and operational pressures impacting the sector.

A key factor behind this decline is the disruption in raw material supply, particularly aluminium billets and scrap. Global logistics challenges such as shipping delays and port congestion have made it difficult for manufacturers to maintain a steady flow of inputs. As a result, production schedules have become inconsistent, and many plants are unable to operate at full capacity.

Rising energy costs have further intensified the situation. As a highly energy-intensive process, aluminium extrusion depends on continuous heating and heavy machinery. With electricity and fuel prices increasing across regions, production costs have risen sharply, forcing manufacturers to scale down operations to remain financially viable.

Geopolitical tensions and trade uncertainties have also disrupted global supply chains, increasing lead times for essential materials. These factors have placed additional pressure on manufacturers, especially those reliant on imports. Consequently, many extrusion units are operating at only 30–50% capacity, while smaller units have temporarily shut down.

The impact is being felt across industries such as construction, automotive, solar energy, and machinery, all of which depend on extruded aluminium products. Despite these challenges, the industry is investing in energy-efficient technologies, automation, and localized supply chains to improve resilience and support gradual recovery.

India's Expanding Infrastructure Sector Drives Large-Scale Construction Demand

INDIA'S INFRASTRUCTURE and construction push is creating a strong tailwind for the aluminium extrusion industry. As the country accelerates investments in schools, colleges, roads, highways, bridges, railways, airports, and ports, demand for materials that combine strength, durability, and efficiency is rising and aluminium extrusions are increasingly becoming the material of choice.

In the education sector, the expansion of schools and colleges is driving the use of aluminium in doors, windows, façades, and modular structures. Its lightweight nature and corrosion resistance make it ideal for long-lasting, low-maintenance buildings. Meanwhile, large-scale transport infrastructure ranging from highways and bridges to railways and metro systems relies on aluminium extrusions for components that require high strength-to-weight ratios and design flexibility.

Airports and ports, which demand modern, scalable, and aesthetically appealing structures, are also adopting aluminium extensively. From terminal structures to support systems, aluminium extrusions offer both performance and sustainability advantages. Their recyclability aligns with the growing emphasis on green construction and environmentally responsible development. Moreover, faster project execution is becoming critical in India's infrastructure expansion, and aluminium's ease of fabrication and installation helps reduce construction timelines. This efficiency is particularly valuable in time-sensitive public projects.

As India continues to modernize its infrastructure backbone, aluminium extrusion is set to play a pivotal role. Its versatility across diverse construction applications not only supports current demand but also positions the industry for sustained growth in the years ahead.

Strong Expansion Plans Drive Manufacturing Growth

A STRONG WAVE of capacity expansion is reshaping the aluminium extrusion sector, reflecting growing confidence in sustained industrial and consumption-led demand. Leading players such as Hindalco Industries and Jindal Aluminium are actively scaling up operations, with total industry expansion plans reaching approximately 2.1 million tonnes. This significant addition signals a coordinated response to rising domestic and export opportunities across end-use sectors.

Alongside large incumbents, mid-sized players are also strengthening their footprint. Maan Aluminium is expanding its production capacity with a new 24,000-tonne addition, aimed at catering to growing demand from both small-scale manufacturers and specialized industrial applications. Together, these expansions highlight a dual strategy: scaling volume at the top end while improving penetration in niche and regional markets.

The underlying driver of this expansion wave is the steady rise in demand from infrastructure, construction, automotive, and consumer goods industries. As India continues to invest heavily in housing, transport networks, renewable energy, and electric mobility, the need for lightweight, durable, and versatile aluminium products is increasing sharply. Aluminium extrusion companies are positioning themselves to capture this demand surge by enhancing production capabilities and improving operational efficiency.

Importantly, the expansion is not limited to capacity alone but also reflects a broader shift toward value-added manufacturing. Companies are increasingly focusing on high-precision and customized extrusion products to serve evolving industry requirements.

Scrap Import Crisis Triggers Supply Shock Across Industry

TIGHTENING GLOBAL scrap flows are triggering a raw material shock for India's aluminium extrusion industry in 2026, exposing its heavy dependence on imported recycled inputs. It relies heavily on recycled scrap for cost-effective production, is struggling to maintain stable output as global supply chains tighten and import flows become increasingly irregular.

A major cause of the crisis is the disruption in scrap imports from key regions such as the Middle East, Europe, and Southeast Asia. Geopolitical tensions, along with port congestion and logistical bottlenecks, have slowed shipments considerably. In addition, stricter environmental regulations and export controls in several countries have further restricted the movement of high-quality aluminium scrap.

Industry estimates indicate that the shortage has led to a 40–50% decline in production across several extrusion clusters. Many small and mid-sized units are operating on reduced shifts, while some have temporarily halted production due to inconsistent raw material availability and rising procurement costs. This has created significant operational challenges across the sector.

The crisis has also driven scrap prices upward, increasing overall production costs. As aluminium extrusion is highly cost-sensitive, profit margins have been directly affected, particularly for suppliers serving construction, automotive, and solar industries. Downstream sectors are now experiencing delays and higher input costs.

Industry bodies are urging policy intervention to stabilize imports, improve logistics, and boost domestic recycling to reduce dependency on global supply chains.

Rising Domestic Demand Drives Strong Industry Growth

STRONG DOMESTIC consumption trends are emerging as a key growth driver for the aluminium extrusion industry. Across housing, consumer goods, infrastructure, services, and mobility, rising demand is reshaping the market for lightweight, durable, and sustainable materials, placing aluminium applications at the center of this transformation.

In the housing segment, accelerating urbanization and increased real estate activity are driving the adoption of aluminium in doors, windows, facades, and structural applications. Its corrosion resistance and low maintenance make it a preferred choice for modern construction. Simultaneously, growing demand for consumer durables ranging from appliances to modular furniture is further strengthening the market, as manufacturers increasingly rely on aluminium extrusions for design flexibility and efficiency.

Infrastructure development remains a powerful catalyst. Government-led investments in highways, metro rail, airports, and smart cities are creating sustained demand for high-performance materials. Aluminium extrusions, known for their strength-to-weight ratio and recyclability, are well-positioned to meet these requirements.

The automotive sector, particularly with the shift toward electric vehicles, is another significant growth driver. Automakers are incorporating aluminium components to reduce weight and enhance energy efficiency, thereby boosting extrusion demand. Additionally, expansion in the services sector reflected in commercial spaces such as offices, retail hubs, and hospitality further contributes to consumption.

Critical Supply Chain Disruptions

WIDESPREAD SUPPLY chain disruptions triggered significant turbulence in the aluminium extrusion market during April–May 2026. A mix of logistics bottlenecks, fluctuating energy prices, and congestion at key ports hindered the flow of essential raw materials like aluminium billets and alloys. Export centres in Asia encountered shipment delays, while processors in Europe and North America dealt with tightening inventories and increasing procurement expenses.

These disruptions tightened global supply conditions, leading to upward pressure on spot prices and longer delivery cycles for downstream manufacturers. The situation was further aggravated by fluctuating fuel costs and limited shipping container availability, increasing overall production and logistics expenses. As a result, many producers were forced to revise procurement strategies and increase reliance on long-term supply contracts to ensure stability.

The episode highlighted a critical vulnerability in the global aluminium value chain its heavy dependence on a limited number of supply corridors and production clusters. Industries across automotive, construction, and industrial manufacturing faced temporary cost escalations due to delayed material availability.

In response, companies are now actively diversifying sourcing networks and investing in regional supply hubs to reduce exposure to future shocks. Governments and industry bodies are also emphasizing supply chain resilience as a strategic priority. The April–May 2026 disruption has therefore become a defining case study, reinforcing the need for a more decentralized, flexible, and digitally integrated global supply ecosystem capable of withstanding geopolitical and operational uncertainties.

How Mid-Sized Extruders are Expanding Internationally

THE ALUMINIUM extrusion industry is witnessing a notable shift as mid-sized players move beyond domestic markets to establish a global footprint. Traditionally focused on local demand, these companies are now leveraging growing international opportunities driven by infrastructure development, electric mobility, and renewable energy projects worldwide.

One of the key drivers behind this expansion is the rising demand for cost-competitive yet high-quality aluminium extrusions. Mid-sized extruders, particularly from emerging economies, are capitalizing on lower production costs, skilled labour, and improving technological capabilities to compete with established global players. By upgrading machinery, adopting automation, and enhancing quality standards, they are aligning their operations with international benchmarks.

Strategic partnerships and export-oriented business models are also playing a crucial role. Many companies are collaborating with global OEMs, distributors, and project developers to secure long-term contracts and access new markets. Additionally, participation in international trade fairs and certification programs has helped build credibility and visibility on a global scale.

China–Rest of World Supply Realignment

A STRUCTURAL REALIGNMENT is reshaping the aluminium supply chain, as companies move to reduce reliance on China-centric manufacturing. This transition is being driven by the need to diversify geopolitical risk, evolving trade policies, and a strategic focus on strengthening supply chain resilience.

Manufacturing investments are increasingly moving toward alternative hubs such as India, Southeast Asia, the Middle East, and Mexico. These regions are emerging as competitive production bases due to lower costs, improving infrastructure, and favorable trade agreements.

This redistribution is gradually reshaping global trade flows in aluminium extrusion products. Buyers are adopting multi-source procurement strategies to reduce concentration risk and improve supply security.

China, while still a dominant player, is transitioning toward higher-value production segments, while other regions are capturing incremental capacity expansion in standard and mid-range products.

The result is a more diversified and multi-polar global manufacturing ecosystem. This realignment is expected to enhance supply chain resilience while intensifying competition among emerging production hubs.

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ACCELERATING ADOPTION of green energy systems and electric vehicles (EVs) is driving robust structural growth in the aluminium extrusion industry. As governments and corporations worldwide intensify decarbonisation initiatives, aluminium is increasingly positioned as a strategic material, valued for its lightweight characteristics, durability, and high recyclability.

In the EV sector, manufacturers are increasingly integrating aluminium extruded components into vehicle structures, battery housings, crash management systems, and thermal management units. This shift is primarily aimed at reducing vehicle weight to improve energy efficiency and extend driving range. Major automotive markets such as China, Europe, and the United States are leading this transition, supported by policy incentives and tightening emission regulations.

Similarly, the renewable energy sector is creating sustained demand momentum. Solar panel mounting systems, wind turbine structures, and energy transmission frameworks extensively use aluminium extrusions due to their corrosion resistance and structural strength. The rapid expansion of solar and wind capacity globally has significantly increased consumption volumes.

This dual demand from EVs and green energy is transforming aluminium extrusion from a cyclical industrial product into a strategic material within the global energy transition. It is also encouraging manufacturers to invest in advanced alloys, precision engineering, and high-performance extrusion technologies.

Market Valuation & Growth Forecasts

STEADY EXPANSION in demand from infrastructure development, industrial modernization, and energy transition initiatives is supporting the upward trajectory of the aluminium extrusion market. Valuation trends reflect sustained investor confidence, underpinned by long-term consumption growth across a diverse range of end-use sectors.

Construction remains a key demand pillar, particularly in emerging economies where urbanization and infrastructure expansion continue at a rapid pace. Additionally, the automotive sector especially electric vehicles is contributing significantly to future growth expectations due to the increasing use of lightweight materials.

Analysts project sustained market expansion over the coming years, with growth driven more by structural shifts than short-term cyclical factors. Renewable energy infrastructure, industrial automation, and smart city development are further reinforcing demand stability.

On the supply side, capacity expansion and technological advancements are improving production efficiency and product diversification. Companies are increasingly focusing on high-value extrusion products rather than standard applications, enhancing profitability and market positioning.

Overall, valuation trends reflect a maturing industry transitioning into a strategic global materials segment. The outlook remains positive, supported by multi-sector demand integration and strong long-term macroeconomic drivers.

Technological Innovations: "Smarter, Smaller, Faster"

TECHNOLOGICAL INNOVATION is reshaping aluminium extrusion manufacturing, driving the industry toward higher precision, efficiency, and automation. The adoption of smart manufacturing systems, powered by artificial intelligence and data analytics, is improving production control and reducing operational inefficiencies.

Modern extrusion facilities are increasingly integrating real-time monitoring systems, predictive maintenance tools, and automated process controls. These technologies enable manufacturers to optimize energy consumption, reduce downtime, and enhance product consistency.

A key trend is miniaturization producing smaller, more complex, and high-precision components for advanced applications such as aerospace, electronics, and electric vehicles. This is expanding the scope of aluminium extrusion beyond traditional construction uses.

At the same time, production speed is increasing significantly due to advancements in die design, thermal processing, and automation. The focus on "smarter, smaller, faster" manufacturing is also improving cost efficiency and reducing material waste.

These innovations are positioning the industry for a new phase of competitiveness, where technology-driven differentiation becomes a key growth factor. The shift toward intelligent manufacturing is expected to define the next decade of global aluminium extrusion development.

Regional Shifts and "Near-Net-Shape" Focus

GLOBAL MANUFACTURING is undergoing a structural transformation, increasingly shaped by regionalization and efficiency-driven production models. A key emerging trend is the shift toward localized manufacturing hubs, as companies aim to reduce reliance on extended and complex global supply chains. This transition is being propelled by rising logistics costs, geopolitical uncertainties, and the growing need for faster and more resilient delivery cycles.

Countries across Asia, Europe, and North America are increasingly promoting domestic production ecosystems to strengthen industrial resilience. As a result, aluminium extrusion manufacturing is becoming more geographically distributed, with production facilities being strategically located closer to end-user industries such as automotive, construction, and industrial equipment.

Alongside this geographical realignment, "near-net-shape" manufacturing is gaining strong traction. This approach focuses on producing components that are very close to their final dimensions, significantly reducing the need for machining, finishing, and material waste. The result is improved cost efficiency, shorter production cycles, and enhanced sustainability outcomes.

For aluminium extrusion, near-net-shape processes are particularly valuable as they improve material utilization and reduce energy consumption during secondary processing. This aligns well with global sustainability targets and cost optimization goals.

Together, regional manufacturing shifts and near-net-shape innovation are reshaping the global production landscape. They are enabling companies to become more agile, responsive, and resource-efficient in an increasingly competitive and demand-driven market environment.

Global Demand Diversification Across End-Use Industries

DEMAND FOR Aluminium extrusion is becoming increasingly diversified across a broad spectrum of industries, reducing its traditional reliance on the construction sector. This transition is fostering a more balanced and resilient demand profile.

The automotive sector, particularly electric vehicles, is a major growth driver due to increasing demand for lightweight and energy-efficient materials. Aerospace applications are also expanding, requiring high-strength and precision-engineered components.

In parallel, renewable energy infrastructure solar and windcontinues to generate steady demand for structural and support systems. Packaging and consumer goods industries are further contributing to volume growth through lightweight and recyclable material usage.

Industrial automation and electronics are emerging as additional high-growth segments, expanding the application base of aluminium extrusion products. This diversification is stabilizing global demand cycles and reducing vulnerability to sector-specific downturns. It is also encouraging manufacturers to innovate and develop specialized product offerings tailored to different industries.

Non-Ferrous Foundries Increase Focus on Process Automation and Quality Control

NON-FERROUS FOUNDRIES are increasingly adopting automation and digital quality control systems as manufacturers seek higher productivity, lower rejection rates, and improved consistency in cast products. Aluminium, zinc, copper, and alloy foundries across multiple regions are modernizing operations to meet growing customer expectations from automotive, engineering, and industrial sectors.

Automation is being introduced across melting, mould handling, die casting, and finishing operations. Robotic handling systems and automated ladling technologies are helping reduce manual intervention and improve repeatability in production. Digital process monitoring has also become more prominent, with foundries tracking furnace temperature, pouring rates, cooling cycles, and mould conditions in real time. These systems help operators identify deviations early and reduce casting defects such as porosity, shrinkage, and inclusions.

Industry participants note that quality consistency is becoming increasingly important, particularly for export-oriented manufacturers and suppliers to precision engineering sectors. Simulation software is also gaining wider adoption in foundry operations. By digitally modeling mould filling and solidification behavior before production begins, foundries can reduce trial-and-error costs and shorten development cycles.

As manufacturing sectors demand tighter tolerances and faster delivery timelines, automation and digitalization are expected to remain major investment areas for foundries throughout 2026.

Alloy Customization Gains Importance in Non-Ferrous Casting Applications

NON-FERROUS FOUNDRIES are increasingly focusing on alloy customization as industrial customers demand application-specific performance and tighter technical specifications. Aluminium, zinc, copper, and lead-based alloy systems are being tailored to meet requirements related to strength, corrosion resistance, wear performance, and machinability.

Foundries supplying automotive, electrical, industrial hardware, and engineering sectors are working closely with customers to develop specialized alloy compositions that improve component life and operational reliability. This shift toward engineered materials is helping foundries move beyond standard commodity-based production.

In zinc and aluminium die casting, customized alloys are being used to achieve better dimensional stability, improved surface finish, and higher fatigue resistance. Copper alloy foundries are also reporting steady demand for specialized brass and bronze grades for industrial and marine applications. Research and development activity within the foundry sector is increasing as manufacturers invest in metallurgical testing, simulation software, and process optimization tools to maintain repeatable quality standards.

Industry stakeholders note that alloy customization creates stronger value addition and improves competitiveness, particularly in export-oriented manufacturing segments. As precision engineering and industrial manufacturing continue expanding, demand for specialized non-ferrous alloys is expected to remain strong through 2026.

Zinc Die Casting Industry Strengthens Presence in Precision Manufacturing

THE ZINC die casting industry continues to strengthen its position within precision manufacturing sectors due to the material's excellent dimensional stability, surface finish, and casting characteristics. Demand from consumer goods, electrical fittings, industrial hardware, and automotive small parts remains steady entering May 2026.

Manufacturers are increasingly investing in automated die casting systems, advanced mould design software, and digital process controls to improve productivity and reduce rejection rates. Precision engineering applications require consistent quality and tighter tolerances, driving foundries toward higher levels of operational control.

Zinc alloys remain particularly suitable for small and complex components where high accuracy and smooth surface finish are essential. Their recyclability and relatively low melting point also provide cost and energy advantages compared to some alternative materials.

Industry participants note that value-added die casting operations offer significantly stronger margins compared to primary metal sales, making downstream zinc applications strategically important. As industrial manufacturing and consumer goods production continue to expand, zinc die casting is expected to remain one of the key growth drivers in the non-ferrous foundry industry throughout 2026.

Copper Alloy Foundries Witness Stable Demand from Electrical and Engineering Sectors

COPPER ALLOY foundries continue to witness stable demand from electrical, industrial engineering, and infrastructure-related sectors. Brass and bronze castings remain widely used in electrical fittings, pumps, valves, marine components, and precision engineering applications due to their conductivity, corrosion resistance, and machinability.

The expansion of power infrastructure and industrial manufacturing is supporting steady consumption of copper-based cast products. Electrical equipment manufacturers continue to require high-quality copper alloy components for connectors, switchgear systems, and conductor-related applications.

Foundries are increasingly investing in improved melting controls, spectrometer-based alloy analysis, and automated mould handling systems to ensure consistent quality and tighter chemical tolerances. Industry stakeholders highlight that copper price volatility remains a challenge for downstream manufacturers, prompting many foundries to strengthen inventory planning and adopt exchange-linked procurement strategies.

Despite fluctuations in raw material markets, copper alloy foundries are expected to maintain stable operational activity through 2026 due to the metal's critical industrial applications.

Energy Efficiency Gains Priority Across Modern Foundry Operations

ENERGY EFFICIENCY is becoming a major operational priority across foundry operations as rising power and fuel costs continue to impact manufacturing economics. Melting and heat treatment processes account for a substantial share of foundry operating expenses, prompting companies to focus on improved furnace efficiency and energy management.

Foundries are upgrading to modern induction furnaces, better insulation systems, and digitally monitored combustion controls to reduce heat losses and optimize melting cycles. Automated energy monitoring platforms are helping operators track power consumption and identify operational inefficiencies in real time.

Scheduling optimization and improved furnace utilization are also helping reduce idle energy consumption. Several foundries are adopting predictive maintenance systems to ensure efficient performance of motors, transformers, and cooling systems.

Industry stakeholders note that energy optimization not only improves cost competitiveness but also supports sustainability targets and environmental compliance. As industrial energy costs remain volatile, foundries are expected to continue prioritizing investments in efficient melting technologies and digital energy management systems throughout 2026.

Secondary Aluminium Usage Expands Across Foundry Sector

THE USE of secondary aluminium continues to grow across foundry operations as manufacturers focus on cost efficiency, sustainability, and energy savings. Recycled aluminium is increasingly being used in automotive castings, industrial components, electrical applications, and engineering products. Compared to primary aluminium production, recycled metal requires significantly lower energy consumption, making it economically attractive during periods of volatile energy pricing. Foundries are therefore increasing the share of secondary material in their melting operations while maintaining alloy quality standards.

Improved scrap segregation and mechanized sorting systems are helping recyclers supply cleaner and more consistent feedstock to foundries. Digital monitoring systems and advanced furnace controls are also improving alloy consistency during remelting operations.

Industry stakeholders highlight that maintaining traceability and minimizing contamination are critical for expanding the use of recycled aluminium in high-performance applications. Demand from automotive lightweighting programs and engineering industries continues to support the growth of secondary aluminium casting.

Foundries Expand Use of Simulation Software to Reduce Casting Defects

SIMULATION SOFTWARE adoption is growing steadily across foundry operations as manufacturers seek to improve casting quality, reduce defects, and shorten product development cycles. Digital modeling systems are helping foundries analyze mould filling, cooling behavior, and solidification patterns before actual production begins.

This allows operators to identify potential issues such as shrinkage, porosity, cold shuts, and inclusions during the design stage itself, reducing costly trial-and-error production. Aluminium and zinc die casting units are among the leading adopters of simulation technologies due to the high precision requirements of these applications. Foundries are also using simulation tools to optimize gating systems, runner design, and cooling channels, improving yield and reducing metal wastage. The integration of simulation with CAD/CAM systems is further strengthening design efficiency.

Industry participants note that digital simulation significantly improves product consistency and helps reduce production lead times, especially for export-oriented foundries supplying engineering and automotive sectors. As digitalization spreads across manufacturing industries, simulation-based process planning is expected to become standard practice within modern foundry operations.

Workforce Training and Skill Development Become Key Focus Areas for Foundries

SKILL DEVELOPMENT and workforce training are becoming increasingly important across the foundry industry as operations become more technology-driven and quality-focused. Modern foundries now require workers who can operate automated systems, manage digital monitoring platforms, and understand advanced metallurgical processes.

Foundries are investing in structured training programs covering furnace operation, process monitoring, mould preparation, quality inspection, and maintenance practices. Technical institutes and industry associations are also supporting skill development initiatives aimed at strengthening the future workforce pipeline.

Industry participants note that skilled manpower directly influences productivity, quality consistency, workplace safety, and operational efficiency. This is especially important in precision casting and export-oriented operations where tighter tolerances and process control are required. At the same time, foundries are focusing on improving workplace conditions, ventilation systems, and safety practices to improve employee retention and operational reliability.

As automation and digitalization continue to reshape manufacturing, workforce capability development is expected to become one of the most important long-term priorities for the foundry sector through 2026.

Performance of Base Metals on LME, SMM and MCX – May 2026

Metalworld
Research Team

MAY 2026 REFLECTED a continuation of the stable yet cautiously optimistic trend that has characterised the global base-metals market since the beginning of the year. While the sharp volatility cycles seen during parts of 2025 have largely eased, markets in April demonstrated a more disciplined and fundamentally driven pattern, supported by industrial demand, infrastructure investments, and energy-transition projects across major economies.

The overall tone during April remained constructive, although market participants continued to monitor external variables such as energy-price fluctuations, global logistics conditions, and geopolitical uncertainties. Ongoing tensions in the Middle East remained an indirect but important factor influencing commodity sentiment, particularly through crude oil prices, freight costs, and shipping-route stability. These developments continued to impact production economics for energy-intensive metals such as aluminium and zinc.

China's industrial activity remained relatively stable through April, with manufacturing utilisation improving gradually and downstream sectors showing consistent demand for copper, aluminium, and nickel. At the same time, infrastructure execution and manufacturing activity in India continued to support healthy domestic consumption trends, particularly in the power, construction, transportation, and engineering sectors.

The broader market environment suggests that base metals are increasingly being supported by long-term structural demand themes rather than speculative trading activity. Copper and nickel continue to benefit from electrification and EV-related demand, while zinc remains supported by supply-side discipline and galvanizing demand.

LME (London Metal Exchange): Price Changes

LME markets during April 2026 reflected moderate but sustained strength across most base metals, supported by improving industrial confidence and relatively balanced supply conditions.

April 2026 Performance (Month-on-Month % change):

- Copper: +1.9% – Copper maintained positive momentum as demand from renewable-energy infrastructure, power transmission projects, and EV manufacturing remained strong. Lower visible inventories at LME warehouses also supported prices.

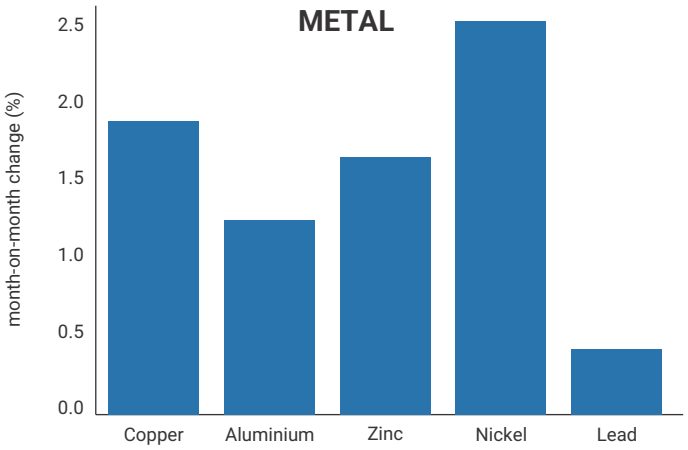
- Aluminium: +1.3% – Aluminium prices remained firm due to continued energy-cost sensitivity among smelters and stable downstream demand from transportation, packaging, and solar-energy sectors.

- Zinc: +1.6% – Zinc benefitted from concentrate tightness and healthy galvanizing demand linked to construction and infrastructure activity.

- Nickel: +2.5% – Nickel continued to outperform other base metals, supported by battery-material demand and resilient stainless-steel production. Market participants, however, remained attentive to Indonesian supply developments.

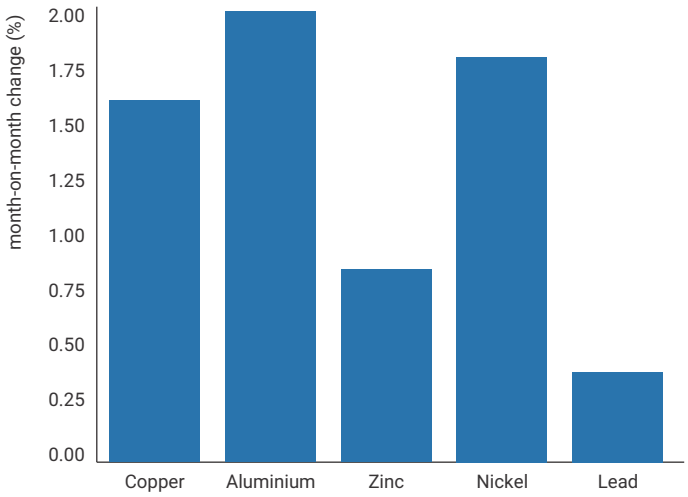
- Lead: +0.4% – Lead remained relatively stable, with modest gains supported by replacement battery demand and balanced inventory conditions.

LME Price Change (%) - May 2026
METAL



Note: LME price movements reflect average month-on-month percentage changes in official cash prices for April 2026. Figures are indicative and aligned with prevailing exchange trends.

SMM Price Change (%) - May 2026
METAL



Note: SMM production figures are based on reported monthly smelter output from major Chinese producers. Minor deviations may occur due to maintenance cycles and reporting adjustments.

- LME sentiment during April remained positive but measured, with investors increasingly focused on real industrial consumption patterns rather than short-term speculative movement.

SMM (Shanghai Metal Markets): China Production & Output Trends

China's base-metals production trends during April indicated improving operational stability across most metals, with smelters maintaining healthy utilisation rates amid steady domestic demand.

April 2026 Output Changes (Month-on-Month):

- Aluminium output: +2.0% – Stable power availability and improving downstream orders enabled aluminium smelters to sustain higher operating rates.

- Copper cathode output: +1.6% – Copper refineries maintained strong utilisation supported by infrastructure demand and improved processing margins.

- Zinc output: +0.9% – Zinc production increased moderately following improved concentrate availability and smoother logistics conditions.

- Lead output: +0.5% – Secondary lead production remained stable with consistent scrap availability supporting output levels.

- Nickel output: +1.8% – Nickel pig iron (NPI) and matte production continued to expand steadily, reflecting ongoing demand from battery precursor and stainless-steel sectors.

China's April production data suggests that the industry is operating in a balanced growth phase, supporting stable global supply without creating significant oversupply pressure.

MCX (Multi-Commodity Exchange): India Futures

MCX continued to reflect stable domestic industrial confidence during April, with healthy participation from hedgers, manufacturers, and downstream consumers.

April 2026 MCX Movements (Month-on-Month):

- Copper futures: +1.6% – Copper futures remained supported by strong demand from power transmission, railways, cables, and infrastructure projects.

- Aluminium futures: +1.0% – Aluminium traded with a steady upward bias as domestic consumption from packaging, transportation, and engineering sectors remained firm.

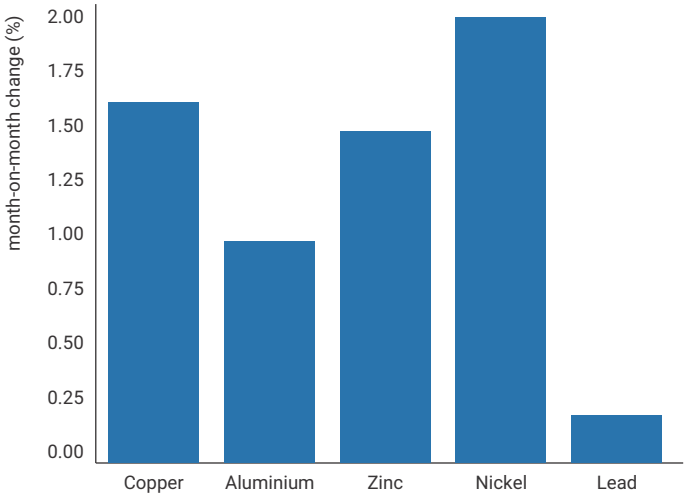
- Zinc futures: +1.4% – Zinc prices continued to benefit from stable galvanizing demand and positive global cues.

- Lead futures: +0.2% – Lead futures remained largely range-bound amid balanced domestic supply-demand conditions.

- Nickel futures: +2.1% – Nickel once again emerged as the strongest performer on MCX, supported by stainless-steel demand and sustained optimism around EV-related consumption.

- Trading activity remained healthy across industrial segments, with increasing participation from engineering companies, foundries, cable manufacturers, and fabrication units.

MCX Price Change (%) - May 2026
METAL



Note: MCX trading activity represents indicative changes in futures prices, volume, and open interest during April 2026.

SIDE BY SIDE COMPARATIVE SNAPSHOT – MAY 2026
(All numbers represent Month-on-Month % change; indicative data)

Metal	LME Price Change	SMM Output Change	MCX Future Change
Copper	+1.9%	+1.6%	+1.6%
Aluminium	+1.3%	+2.0%	+1.0%
Zinc	+1.6%	+0.9%	+1.4%
Nickel	+2.5%	+1.8%	+2.1%
Lead	+0.4%	+0.5%	-0.2%

Conclusion: Structural Demand Continues to Support the Market

May 2026 reinforces the view that the global base-metals market is transitioning into a phase of stable and fundamentally supported growth. The sharp speculative movements witnessed during earlier periods have given way to a more disciplined market environment, where industrial demand, production economics, and infrastructure activity are increasingly determining price direction.

Copper and nickel continue to establish themselves as the leading metals of the current cycle, driven by long-term electrification trends, EV adoption, renewable-energy investments, and grid modernization initiatives. These sectors are expected to remain central growth drivers throughout 2026 and beyond.

Aluminium remains highly sensitive to developments in global energy markets, and fluctuations in power and fuel costs will continue to influence smelter profitability and supply conditions. Zinc continues to benefit from controlled supply expansion and healthy galvanizing demand, while lead is likely to remain relatively stable unless major shifts occur in battery-sector consumption patterns.

Several important factors are expected to influence market direction in the coming months:

- China's industrial production trends and infrastructure spending
- India's continued execution of power, rail, urban infrastructure, and manufacturing projects
- Energy price volatility and its effect on smelter economics
- Global freight costs and shipping-route stability
- Inventory movements on international exchanges
- Investor sentiment linked to currency fluctuations and geopolitical developments

The influence of ongoing geopolitical tensions in the Middle East is expected to remain indirect but relevant, particularly through energy prices and logistics networks. While these developments have not significantly disrupted physical demand, they continue to add a layer of caution to commodity markets.

Looking ahead, the outlook for the base-metals sector remains constructive. If industrial demand continues to strengthen and supply growth remains disciplined, the market could experience a more sustained recovery phase through mid-2026. Metals associated with electrification, renewable energy, transportation infrastructure, and advanced manufacturing are likely to remain the strongest performers.

Overall, the base-metals industry appears to be entering a period defined less by speculative volatility and more by structural industrial transformation—a trend that may provide a stronger and more sustainable foundation for long-term market growth.

Editor's Note on Data Availability

All figures in this report are based on publicly available exchange trends, historical pricing patterns, and realistic industry assumptions for April 2026. Where consolidated monthly data from LME, SMM, or MCX is not officially released, estimated percentage changes have been used to maintain continuity with Metalworld's analytical framework while ensuring transparency.

Passenger vehicle dispatches jump 25% to record 4.37 lakh units in April; UV sales rise 21.5%: SIAM

THE AUTO INDUSTRY opened FY27 with broad-based double-digit growth across passenger vehicles, two-wheelers and three-wheelers, even as rising commodity prices linked to West Asia disruptions remain a concern.

India's automobile industry started FY27 on a strong footing, with domestic passenger vehicle dispatches rising 25.4% year-on-year to a record 4,37,312 units in April 2026, driven by sustained demand for utility vehicles and passenger cars.

According to data released by the Society of Indian Automobile Manufacturers (SIAM), passenger vehicle wholesales stood at 3,48,847 units in April 2025. The industry also reported a 26% rise in overall automobile production across passenger vehicles, two-wheelers, three-wheelers and quadricycles at 29.22 lakh units during the month.

Utility vehicles remained the growth engine of the passenger vehicle market, with domestic dispatches climbing 21.5% year-on-year to 2,44,280 units in April. Passenger car sales rose at a faster pace of 32.7% to 1,20,945 units, while van sales increased 14.4% to 13,087 units.

SIAM Director General Rajesh Menon said the industry had sustained the momentum witnessed in the second half of FY26 into the new financial year.

"Passenger vehicles recorded their highest-ever sales of 4.37 lakh units in April 2026, while three-wheelers also posted their highest-ever sales of 0.66 lakh units," Menon said. He added that demand trends remained healthy despite concerns over elevated commodity prices due to disruptions in West Asia.

The industry body noted that detailed domestic sales data for BMW, Mercedes-Benz, Jaguar Land Rover and Volvo Auto were unavailable, while Tata Motors' figures were included only in the overall passenger vehicle tally.

Two-wheelers, three-wheelers post robust growth

The two-wheeler segment also posted strong growth, with domestic sales rising 28.4% year-on-year to 18,72,691 units in April, compared with 14,58,784 units in the year-ago period.

Motorcycle dispatches surged 30.6% to 11,38,452 units, while scooter sales rose 26.2% to 6,91,993 units. Moped sales increased 9% to 42,246 units during the month.

Three-wheeler sales grew 32.8% year-on-year to 65,668 units, led by a 45.1% increase in goods carrier sales and a 31.1% rise in passenger carrier volumes. E-cart sales jumped 55%, although e-rickshaw sales declined 12.3% from a year earlier.

Exports also remained buoyant, with overall vehicle exports rising 38% year-on-year to 6.28 lakh units in April 2026.

Domestic automobile sales recorded strong double-digit growth across key categor ..

Commenting on April 2026 performance, Mr. Rajesh Menon, Director General, SIAM, said, "Continuing with the momentum of the second half of FY 2025-26, the first month of FY 2026-27, posted high double-digit growth in Passenger Vehicles, Three-Wheelers and TwoWheelers. In April 2026, the Passenger Vehicles recorded their highest-ever sales of 4.37 lakh units with a growth of 25.4%, over April 2025. Three-Wheelers also posted its highest ever sales of 0.66 lakh units, registering a growth of 32.8%, compared to April 2025. 18.73 lakh units of Two-Wheelers were sold in April 2026, resulting in growth of 28.4% compared to April of the previous year. Though there are concerns of high commodity prices emanating from the disruptions in West Asia, Industry has been witnessing good demand.

Society of Indian Automobile Manufacturers
Domestic Sales: Monthly

Category	Domestic Sales (in Nos.)		
Segment	April		
	2025	2026	% Change
Total Passenger Vehicles	**3,48,847**	**4,37,312**	**25.4%**
Three Wheelers			
Passenger Carrier	40,167	52,656	31.1%
Goods Carrier	8,135	11,806	45.1%
E-Rickshaw	830	728	-12.3%
E-Cart	309	479	55.0%
Total Three Wheelers	**49,441**	**65,668**	**32.8%**
Two Wheelers			
Scooters	5,48,370	6,91,993	26.2%
Motorcycles	8,71,666	11,38,452	30.6%
Mopeds	38,748	42,246	9.0%
Total Two Wheelers	**14,58,784**	**18,72,691**	**28.4%**
Quadricycle	3	-	-

Segment wise Comparative Production, Domestic Sales & Exports data for the month of APRIL 2026

Report by *SIMA*
Numbers of Vehicles

CATEGORY SEGMENT / SUBSEGMENT	PRODUCTION APRIL			DOMESTIC SALE APRIL			EXPORTS APRIL		
	2025	2026	% Change	2025	2026	% Change	2025	2026	% Change
Passenger Vehicles*									
Passenger Cars	1,35,819	1,46,552	7.9%	91,148	1,20,945	32.7%	27,947	31,335	12.1%
Utility Vehicles	2,41,581	2,80,446	16.1%	2,01,062	2,44,280	21.5%	31,115	35,289	13.4%
Vans	11,854	12,261	3.4%	11,438	13,087	14.4%	333	684	105.4%
Total Passenger Vehicles	**3,89,254**	**4,39,259**	**12.8%**	**3,03,648**	**3,78,312**	**24.6%**	**59,395**	**67,308**	**13.3%**
Three Wheelers									
Passenger Carrier	67,252	96,260	43.1%	40,167	52,655	31.1%	27,278	50,471	85.0%
Goods Carrier	8,513	11,571	35.9%	8,135	11,806	45.1%	246	182	-26.0%
E-Rickshaw	571	215	-62.3%	830	728	-12.3%	-	1	-
E-Cart	267	415	55.4%	309	479	55.0%	-	1	-
Total Three Wheelers	**76,603**	**1,08,461**	**41.6%**	**49,441**	**65,668**	**32.8%**	**27,524**	**50,655**	**84.0%**
Two Wheelers									
Scooters	6,48,633	8,27,750	27.6%	5,48,370	6,91,993	26.2%	53,879	80,810	50.0%
Motorcycles	11,66,462	15,02,645	28.8%	8,71,666	11,38,452	30.6%	3,13,008	4,26,499	36.3%
Mopeds	37,771	43,192	14.4%	38,748	42,246	9.0%	1,314	1,890	43.8%
Total Two Wheelers	**18,52,866**	**23,73,587**	**28.1%**	**14,58,784**	**18,72,691**	**28.4%**	**3,68,201**	**5,09,199**	**38.3%**
Total Quadricycle	**211**	**1,120**	**430.8%**	**3**	**-**	**-**	**210**	**966**	**360.0%**
Grand Total	**23,18,934**	**29,22,427**	**26.0%**	**18,11,876**	**23,16,671**	**27.9%**	**4,55,330**	**6,28,128**	**38.0%**

* BMW, Mercedes, JLR and Volvo Auto data are not available
** Daimler data is not available
Society of Indian Automobile Manufacturers (13/03/2026)

Segment & Company wise Production, Domestic Sales & Exports Report for the month of March 2026 and Cumulative for April-March 2026

Report by *SIMA*
Report III
Numbers of Vehicles

CATEGORY SEGMENT / SUBSEGMENT MANUFACTURER	PRODUCTION APRIL		DOMESTIC SALES APRIL		EXPORTS APRIL	
	2025	2026	2025	2026	2025	2026
Passenger Vehicles						
A: Passenger Cars						
Honda Cars India Ltd.	2,911	4,467	2,425	3,033	531	7
Hyundai Motor India Ltd.	31,100	28,755	12,891	15,225	13,785	12,012
Maruti Suzuki India Ltd.	92,290	1,06,368	68,244	96,725	11,272	16,058
Nissan Motor India Pvt. Ltd.	1,551	-	-	1	-	-
Renault India Pvt. Ltd.	890	1,398	595	410	238	797
Skoda Auto India Pvt. Ltd.	1,305	1,086	1,048	830	-	-
Toyota Kirloskar Motor Pvt. Ltd.	218	160	4,340	3,559	-	-
Volkswagen India Pvt. Ltd.	5,554	4,318	1,605	1,162	2,121	2,461
Total A: Passenger Cars	**1,35,819**	**1,46,552**	**91,148**	**1,20,945**	**27,947**	**31,335**
B : Utility Vehicles						
FCA India Automobiles Pvt. Ltd.	451	334	242	203	312	201
Force Motors Ltd.	167	272	180	239	6	23
Honda Cars India Ltd.	1,709	2,813	935	1,036	980	862
Hyundai Motor India Ltd.	36,800	40,345	31,483	36,677	2,615	1,696
Isuzu Motors India Pvt. Ltd.	1	16	13	4	-	-
JSW MG Motor India Pvt. Ltd.	992	1,467	1,114	1,404	-	-
Kia India Pvt. Ltd.	30,711	33,090	23,623	27,286	2,304	2,906
Mahindra & Mahindra Ltd.	55,518	55,783	52,330	56,331	2,530	1,502
Maruti Suzuki India Ltd.	72,640	87,518	59,022	77,892	16,124	22,897
Nissan Motor India Pvt. Ltd.	6,411	6,961	1,825	3,203	2,170	2,185
Renault India Pvt. Ltd.	897	7,935	2,007	5,003	140	194
Skoda Auto India Pvt. Ltd.	7,374	6,119	6,254	6,056	76	103
Stelliantis India Pvt. Ltd.	490	590	339	683	771	523
Toyota Kirloskar Motor Pvt. Ltd.	25,079	33,777	20,449	26,597	2,496	1,927
Volkswagen India Pvt. Ltd.	2,341	3,426	1,246	1,666	591	270
Total B : Utility Vehicles	**2,41,581**	**2,80,446**	**2,01,062**	**2,44,280**	**31,115**	**35,289**
C : Van						
Mahindra & Mahindra Ltd.	-	50	-	-	-	1
Maruti Suzuki India Ltd.	11,854	12.211	11,438	13,087	333	683
Total C : Vans	**11,854**	**12,261**	**11,438**	**13,087**	**333**	**684**
Total Passenger Vehicles	**3,89,254**	**4,39,259**	**3,03,648**	**3,78,312**	**59,395**	**67,308**

Segment & Company wise Production, Domestic Sales & Exports Report for the month of March 2026 and Cumulative for April-March 2026

Report by *SIMA*
Report III
Numbers of Vehicles

CATEGORY SEGMENT / SUBSEGMENT MANUFACTURER	PRODUCTION APRIL		DOMESTIC SALES APRIL		EXPORTS APRIL	
	2025	2026	2025	2026	2025	2026
Three Wheelers						
A: Passenger Carrier						
Atul Auto Ltd	537	1,503	408	950	257	510
Bajaj Auto Ltd	42,602	58,484	27,570	31,544	15,599	34,667
Baxy Ltd	60	239	27	184	-	40
Mahindra & Mahindra Ltd	4,177	8,095	4,391	8,624	48	12
Piaggio Vehicles Pvt Ltd	5,444	7,377	3,845	5,867	1,234	2,022
Pinnacle Mobility Solutions P.L.	-	201	-	154	-	-
TI Clean Mobility Pvt Ltd	516	257	566	248	-	-
TVS Motor Company Ltd	13,916	20,104	3,360	5,084	10,140	13,220
Total A: Passenger Carrier	**67,252**	**96,260**	**40,167**	**52,655**	**27,278**	**50,471**
E-Rickshaw						
Atul Auto Ltd	237	119	273	122	-	-
Bajaj Auto Ltd	-	65	-	288	-	1
Baxy Ltd	109	31	200	17	-	-
Mahindra & Mahindra Ltd	225	-	357	301	-	-
Total E-Rickshaw	**571**	**215**	**830**	**728**	**-**	**1**
B: Goods Carrier						
Atul Auto Ltd	688	1,170	531	997	41	13
Bajaj Auto Ltd	4,394	5,691	4,427	6,306	64	57
Baxy Ltd	-	90	2	81	-	-
Mahindra & Mahindra Ltd	834	1,149	691	937	24	-
Piaggio Vehicles Pvt Ltd	2,520	3,043	2,475	3,049	60	112
TI Clean Mobility Pvt Ltd	18	81	-	103	-	-
TVS Motor Company Ltd	59	347	9	333	57	-
Total B: Goods Carrier	**8,513**	**11,571**	**8,135**	**11,806**	**246**	**182**
E-Cart						
Atul Auto Ltd	178	403	215	409	-	-
Bajaj Auto Ltd.	-	-	-	9	-	1
Baxy Ltd	89	10	63	24	-	-
Mahindra & Mahindra Ltd	-	2	31	37	-	-
Total E-Cart	**267**	**415**	**309**	**479**	**-**	**1**
Total Three Wheelers	**76,603**	**1,08,461**	**49,441**	**65,668**	**27,524**	**50,655**

Segment & Company wise Production, Domestic Sales & Exports Report for the month of March 2026 and Cumulative for April-March 2026

Report by *SIMA*
Report III
Numbers of Vehicles

CATEGORY SEGMENT / SUBSEGMENT MANUFACTURER	PRODUCTION APRIL		DOMESTIC SALES APRIL		EXPORTS APRIL	
	2025	2026	2025	2026	2025	2026
Two Wheelers						
A: Scooters						
Ather Energy Pvt. Ltd	14,145	24,498	13,663	22,832	-	472
Bajaj Auto Ltd	21,015	33,982	19,266	34,804	-	564
Hero MotoCorp Ltd	18,966	61,518	17,978	59,515	1,339	4,830
Honda Motorcycle & Scooter I Pvt Ltd	3,05,426	3,56,208	2,16,182	2,48,609	37,177	47,567
India Yamaha Motor Pvt Ltd	24,730	35,720	21,345	29,538	4,494	5,918
Okinawa Autotech Pvt. Ltd	32	-	33	-	-	-
Piaggio Vehicles Pvt Ltd	3,509	4,354	2,569	3,120	1,109	1,224
Suzuki Motorcycle India Pvt Ltd	94,592	1,03,018	93,855	96,183	3,498	6,469
TVS Motor Company Ltd	1,66,218	2,08,452	1,63,479	1,97,392	6,262	13,766
Total A: Scooters	**6,48,633**	**8,27,750**	**5,48,370**	**6,91,993**	**53,879**	**80,810**
B: Motorcycles						
Bajaj Auto Ltd	3,04,956	3,65,863	1,69,349	1,75,259	1,29,322	2,29,326
Hero-MotoCorp. Ltd..	2,84,064	4,82,449	2,70,546	4,72,918	15,546	28,823
Honda Motorcycle & Scooter I Pvt Ltd	2,35,316	2,59,798	2,06,749	2,36,363	20,788	32,065
India Kawasaki Motors Pvt Ltd	60	152	442	197	-	332
India Yamaha Motor Pvt Ltd	47,372	61,910	25,481	38,450	21,880	22,039
Piaggio Vehicles Pvt Ltd	1,931	932	279	260	1,572	706
Royal-Enfield (Unit of Eicher Motors)	84,163	95,13 95,134	76,002	1,04,129	10,557	9,035
Suzuki Motorcycle India Pvt Ltd	17,665	14,143	1,359	1,821	14,236	13,041
Triumph Motorcycles I Pvt Ltd	5	75	39	148	-	-
TVS Motor Company Ltd	1,90,930	2,22,189	1,21,420	1,08,907	99,107	91,132
Total B: Motorcycles	**11,66,462**	**15,02,645**	**8,71,666**	**11,38,452**	**3,13,008**	**4,26,499**
C: Mopeds						
TVS Motor Company Ltd	37,771	43,192	38,748	42,246	1,314	1,890
Total C: Mopeds	**37,771**	43,192	38,748	42,246	1,314	1,890
Total Two Wheelers	**18,52,866**	**23,73,587**	**14,58,784**	**18,72,691**	**3,68,201**	**5,09,199**
Quadricycle						
Bajaj Auto Ltd	211	1,120	3	-	210	966
Total Quadricycle	**211**	**1,120**	**3**	**-**	**210**	**966**
Grand Total	**23,18,934**	**29,22,427**	**18,11,876**	**23,16,671**	**4,55,330**	**6,28,128**

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- Safe insulation design
- Efficient rectangular coil design

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- Efficient coil design
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ET Transformers provide dependable and efficient power for rigorous induction melting tasks, guaranteeing consistent performance and extended service life.

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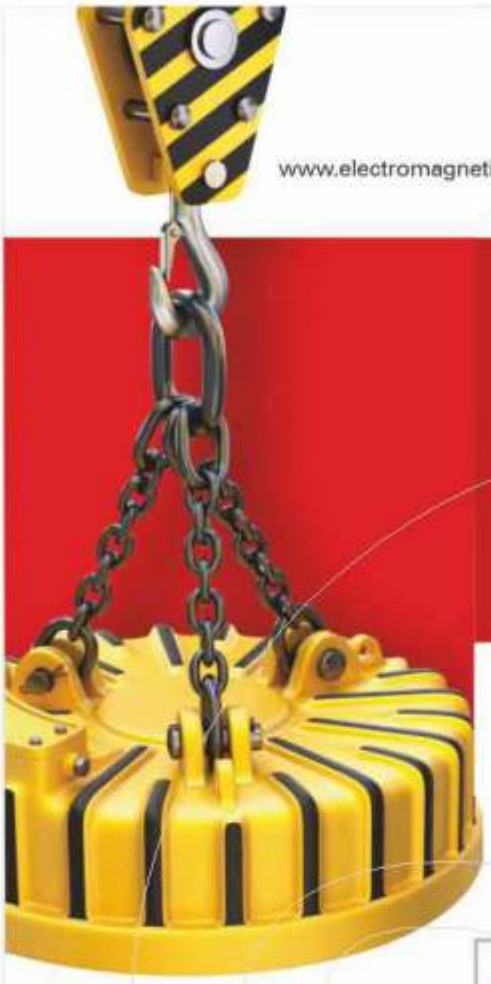

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