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STEELING GROWTH:

Forging India's Future



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Contents . . .

1. India's Steel Sector – Current Landscape and The Near-Term Prognosis 01
2. Rebalancing The Portfolio - Build for Infra Scale, Bridge the Specialty Gap 07
3. Accelerate Decarbonization at Scale - From Compliance to Competitive Advantage 13
4. Secure Raw Material Supply Chains - Iron Ore & Pellets for A Net-Zero-Ready Steel Cycle .. 20
5. Price Volatility and The Need for Hedging 23

Executive Summary

India's iron ore and steel industries are entering a decisive growth arc - defined not just by how much steel is produced, but by how purposefully the ferrous sector serves and shapes markets. As the world's second-largest steel producer, India is building a credible middle path: BF-BOF scale combined with hybrid EAF/IF routes, scrap logistics, and gas-based DRI-HBI, creating both compliance-readiness and cost competitiveness. This report examines that pivot across the three priorities the industry itself has identified: rebalancing the steel product portfolio, accelerating steelmaking decarbonization, and securing the iron ore and pellet supply chain. Finally, the report looks at the single largest financial issue the industry confronts: that of uncertainty in prices of raw materials and finished products and how hedging using derivative instruments can ameliorate this problem.

Rebalancing the portfolio: India's steel demand reached 149 mnt in FY25, up from 136 mnt in FY24, and is projected to reach 192 mnt by 2030 at a CAGR of ~6-7%. Construction and infrastructure already account for 59% of consumption and are expected to drive 60-63% of total demand by 2030, powered by the National Infrastructure Pipeline, Bharatmala, Sagarmala, Smart Cities, Dedicated Freight Corridors, and metro/RRTS expansion — a pipeline of latent demand that could unlock an additional 25-30 mnt once logistics, financing, and execution bottlenecks are addressed. Alongside this domestic strength sits a structural gap: India increasingly imports value-added steel — advanced high-strength, corrosion-resistant, and application-specific grades — even as its own exports stay concentrated in lower-margin products. The PLI scheme for specialty steel is beginning to close this gap, with PLI 1.0-1.2 now representing over ₹55,000 crore in committed investment. Internationally, India is positioning itself as a swing producer — cost-effective for the price-sensitive Global South, and increasingly carbon-compliant for the Global North — aided by preferential access via the India-UK CETA, even as the EU's tightened Steel Safeguard Regulation and 50% US steel tariffs reshape the competitive map.

Accelerating decarbonization at scale: India's steel sector carries one of the highest emissions intensities among major producers — 2.55 tCO_2 per tonne of crude steel, against roughly 1.4 in the US and ~1.9 in the EU — driven by its coal-heavy BF-BOF route and limited scrap use. That reliance is set to deepen before it eases: BF share is projected to rise from 42% to 56% by 2030, even as the global trend moves toward EAF/IF. India's response spans energy efficiency programmes (the PAT scheme delivered ~6.1 mnt of oil-equivalent savings by 2022), wider adoption of best available technologies, grid decarbonization and RE integration, scrap-based circularity, early-stage green hydrogen pilots, and CCUS — against a backdrop of the EU's now financially-binding CBAM and an incoming UK CBAM in January 2027, both of which make emissions-intensity reduction a competitive necessity rather than a voluntary goal for Indian steel exporters.

Securing raw material supply chains: Underpinning both the demand and decarbonization stories is India's iron ore base. Consumption is projected to rise roughly 40% to 360 mnt by FY30, up from around 255-256 mnt in FY25, and while India is broadly volume-sufficient, the share of high-grade ore (Fe ≥62%) has fallen from roughly 50% to about 35% between FY20 and FY26 — pushing greater reliance on beneficiation and palletisations, with the blast furnace charge-mix pellet share targeted to reach ~38% by 2030. Pricing reforms — NMDC's index-based pricing pilot and a proposed IBM benchmarking mechanism against international indices — aim to bring transparent, market-linked pricing to a historically opaque iron ore market.

By investing early, diversifying boldly, and leading the green transition without losing its cost edge, India's steel industry can capture a durable competitive advantage — pairing the scale to serve vast domestic needs with the specialty depth to meet premium export standards, and cementing its position as a globally relevant, competitive, and future-ready force in steel.

The issue of price volatility in ferrous commodities is not only a pain for the industry, but also can be source of economy-wide price risk given the near universal use of steel across industries and sectors. As in some other emerging economies, it is appropriate to take steps to develop hedging markets within the country as also encourage market stakeholders to hedge their risks in these markets for risk management.





STEELING GROWTH: FORGING INDIA'S FUTURE

01. India's Steel Sector – Current Landscape and The Near-Term Prognosis

India's ferrous metals story over the past decade has fundamentally been one of scale — a rise to become the world's second-largest steel producer, with finished steel consumption crossing 138 mnt in FY24 on the back of sustained demand from construction, infrastructure, automotive, and manufacturing. Yet alongside this domestic strength sits a structural gap: India's steel trade profile shows rising reliance on imported value-added steel — advanced high-strength steels, corrosion-resistant grades, application-specific alloys — even as its own exports remain concentrated in lower-margin, semi-finished products.

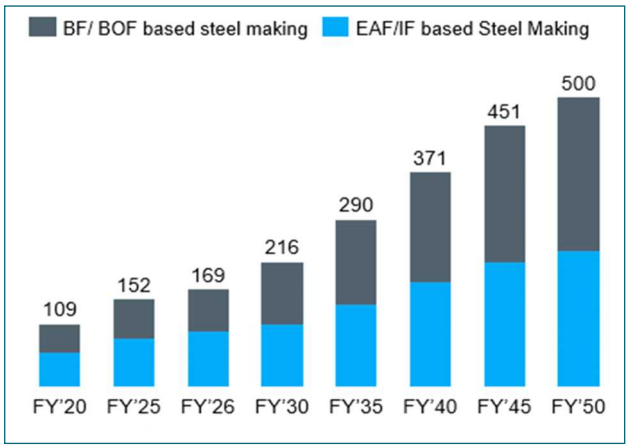
This chapter examines both sides of that portfolio challenge: India's sector-wise steel consumption and product-wise trends across long and flat steel, the substantial latent demand embedded in the infrastructure pipeline, and the Production-Linked Incentive scheme for specialty steel — assessing its role in accelerating India's shift toward the high-specification, value-added products needed to bridge the gap.

GROWTH ARC - HYBRID STEELMAKING & HYBRID MARKETS

India's steel sector is entering a decisive growth arc defined not just by how much it produces, but by how purposefully it serves and shapes markets. Scale remains central, but as a strategic lever: to address vast unmet demand in India and the Global South, while targeting

low-carbon, high-value segments in the Global North. This shift demands more than capacity; it requires a calibrated blend of cost competitiveness, carbon responsibility, and customer-driven solutions.

India is building a credible middle path: Electric Arc Furnace (EAF)+ Basic Oxygen Furnace (BOF) hybrids, scrap logistics, gas-based Direct Reduced Iron (DRI) - Hot Briquetted Iron (HBI) and renewables integration, creating compliance-readiness and cost competitiveness.



ROLE OF NEW CAPACITY ADDITIONS, ESPECIALLY GREEN INVESTMENTS AND SHIFT TOWARD HYBRID / INDUCTION FURNACE (IF) MODELS SUPPORTING DECARBONIZATION

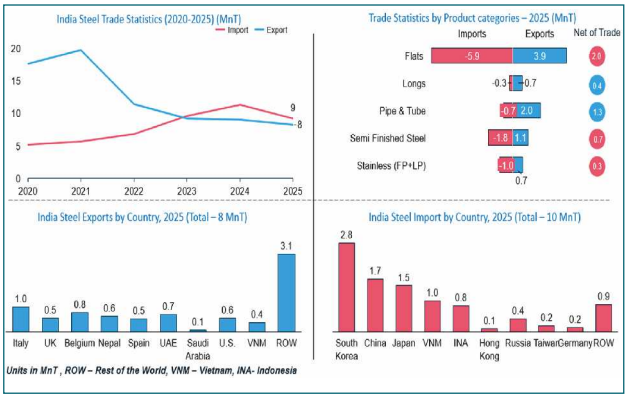
India's steel sector is advancing decarbonization through greater EAF/IF adoption and increased use of scrap and DRI /HBI. However, the widespread consumption of coal-based DRI poses a major challenge.

- The steel capacity distribution is skewed toward BOF (43% of crude steel production) in resource-rich states (e.g. Odisha, Jharkhand) while EAF and IF routes are prevalent in states with lesser mineral resources, supporting secondary steel production.
- Major players (JSW, TATA Steel, JSPL, AMNS, and SAIL) are also transforming, positioning themselves for a future defined by low-carbon steel, circular economy, and carbon regulations.

India's large scale blast furnace-based capacity remains central to its strategy. Domestic infrastructure, housing, and industrial development still require steel at competitive prices and in vast quantities. Serving this demand is non-negotiable and India must continue to expand capacities to ensure equitable, affordable supply across the country.

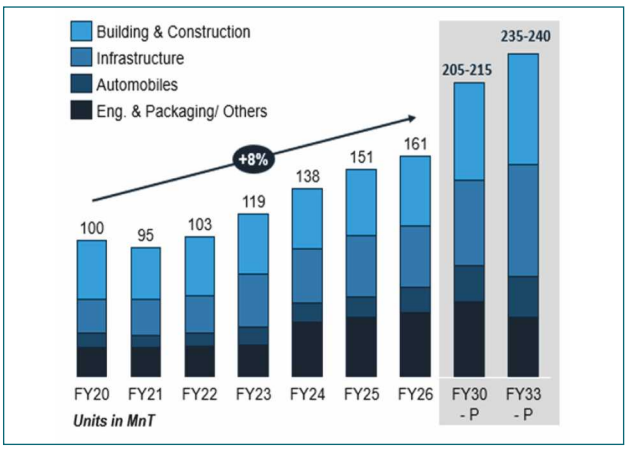
However, this volume expansion is not synonymous with dumping into export markets. The new approach is deliberate: exporting steel not as surplus, but as a strategic solution aligned with global demand and compliance expectations.

India is becoming a competitive supplier across Asia, Middle East, and Africa in addition to supplying higher grade, quality steel to the EU.



This is underpinned by a structurally diverse domestic demand base. While construction and infrastructure still dominate (~70%), formalization and growth in auto, EVs, and white goods are supporting margin-rich, downstream product strategies. Unlike China, where overdependence on construction continues to create cyclical overhangs, India's sectoral diversity is helping de-risk capacity expansion and stabilize long-term planning.

Construction & infra has been and will remain the cornerstone of India's steel consumption



SECTOR-WISE STEEL DEMAND IN INDIA

In FY26, building + construction and infrastructure together accounted for roughly 59% of total steel consumption, followed by engineering, packaging and other segments (29%), and automobiles (11%). Steel consumption in the infrastructure sector has increased by ~20 million tonnes (mnt) from FY20 to FY'26 at a CAGR of ~10%, reflecting robust growth.

- Steel demand is expected to grow at a CAGR of ~7% from FY'25 to Fy'33
- The construction and infrastructure sectors are expected to account for 69-71% of the total steel demand between FY'25 and Fy'33
- Building, construction and infrastructure: The construction sector focuses on the development of urban housing, rural housing, commercial real estate, and industrial construction. The infrastructure sector focuses on the development and expansion of airports, rail networks, pipelines, power generation and transmission lines, roads, and bridges.

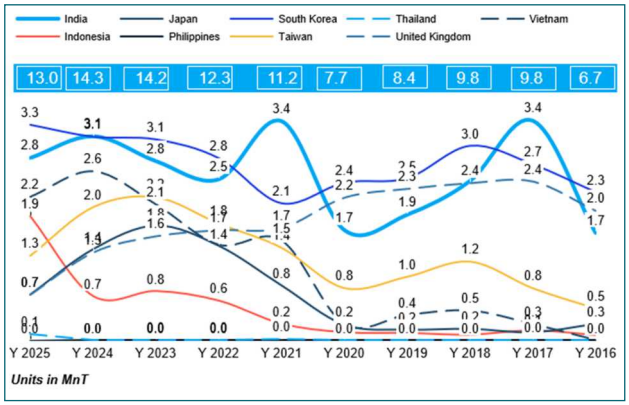
Assumption: *India's GDP is projected to grow at a CAGR of 6.75% to 7.5% over the next 10 years.*

Positioned between the Global North and Global South, India now holds unique leverage. The North demands decarbonized, high-grade steel under tight regulatory frameworks. The South is driven by infrastructure-led growth and price sensitivity. India, increasingly capable of serving both, is seeking to emerge as a credible swing producer carbon-compliant for the North, cost-effective for the South.

Indian steel exports to the EU increased from 1.65 mnt in 2016 to a peak of 3.13 mnt in 2024, easing to 2.8 mnt in 2025. The moderation reflects the EU's tightening trade defence stance, the new steel safeguard regime.

EU STEEL IMPORTS (EXCLUDING STAINLESS STEEL)

- Total imports into EU27 in 2024 was 26.4 mnt. The trade backdrop has since shifted materially: the EU's 2018 safeguard regime expired on 30 June 2026 and was replaced by a far stricter Steel Safeguard Regulation effective 1 July, which cuts the overall duty-free quota by ~47% to 18.3 mnt /year (from ~33-34 mnt), raises the out-of-quota tariff from 25% to 50%, removes quarterly quota carry-over, and introduces a "melt and pour" origin rule. Half of the new quota (9.15 mnt) is ring-fenced for Free Trade Agreement partners, with the remainder open to all World Trade Organisation members on a first-come, first-served basis - meaning Indian exporters without preferential access will be competing for a shrinking residual pool. Table below indicates imports from India + select ASEAN countries (2024 baseline, pre-reform).



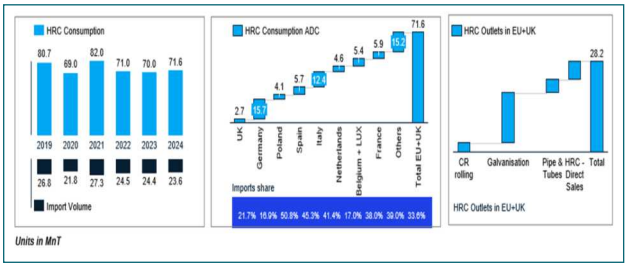
UK market: Comprehensive Economic and Trade Agreement (CETA) unlocks duty-free access even as safeguards tighten.

From 1 July 2026, the UK cut its overall duty-free steel import quota by 51% (to 3.2 mnt), with a 50% tariff on volumes above quota. However, the India-UK Comprehensive Economic and Trade Agreement (CETA), in force since 15 July, secures Indian steel exporters preferential access that largely offsets this squeeze:

- Total duty-free access of over 1.1 mnt/year, via a country-specific quota (CS Q) of 168,029 tonnes plus ~945,000 tonnes through the UK's Authorised Use Scheme (AUS) - India was allocated 40% of the AUS quota.
- Category-specific gains: Hot Rolled Coil (HRC) quota nearly tripled (12,405 to 33,456 tonnes); non-alloy structural sections quota up ~10x (468 to 4,540 tonnes); welded tube quota expanded to 16,327 tonnes; ~95% of non-alloy wire exports exempted from safeguard measures entirely.
- Trade impact: India shipped over 620,000 tonnes of steel to the UK in 2025 (+17% y/y), ~9% of total UK steel imports; officials expect CETA to help lift export value toward ~$1 billion in FY27, up from ~$900 million in FY26. The UK's proposed CBAM (targeted for January 2027) remains under separate discussion and is not yet resolved.

This strategic emergence is unfolding alongside a geographic rebalancing of global steel production. As capacities shift away from China toward regions with access to low-carbon energy and stable trade routes, India is repositioning itself from a domestic demand engine to a global variable in cost, carbon, and customer alignment.

In addition to ASEAN, EU offers attractive opportunity to export low-carbon HRC & other high value-added products



INDUSTRY'S SHIFT TOWARDS GREEN MANUFACTURING DRIVING THE DEMAND FOR LOW-CARBON FLAT STEEL

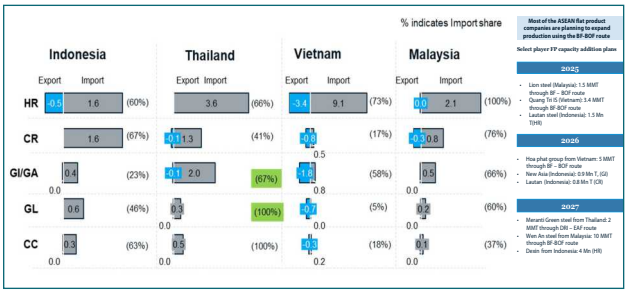
Opportunity enablers for Indian mills

- Demand for low-carbon emission steel is being driven by end-users such as the automotive, offshore wind and construction industries, as well as by regulatory pressures within the EU.
- Green premium potential on achieving targeted emission levels of <0.6t/crude steel is in the range of EUR 100-200/t (per 2026 European green flat-steel assessments), with CBAM now reinforcing this as a compliance necessity rather than a purely voluntary premium.

Trade patterns are also shifting. China's decarbonisation efforts, increasing pressure of worldwide trade barriers against Chinese exports of steel, the EU's introduction of CBAM, and the Middle East's push for self-reliance are creating space for India to step up. Its exports are no longer driven by surplus alone but by optionality enabled flexible product mix and expanding FTA corridors.

The export approach is shifting too, from spot-based sales to application-specific partnerships in Southeast Asia, the Gulf, and parts of Africa. India's ability to adapt quickly to supply disruptions makes it a stabilizing force in an increasingly volatile global system.

ASEAN - Import driven FP market. China – major exporter. India's share of exports to ASEAN is insignificant.



Update (per SEAISI, May 2026): ASEAN-6 apparent steel consumption reached 81 mnt in 2024 and is forecast to hit 87.9 mnt in 2026 (+2.6% y-o-y, +8.2% vs 2024), led by continued demand growth in Vietnam, Indonesia and the Philippines. Regional export volumes stayed high at ~22 mnt in 2025 (just 1 mnt below 2024's record), as Indonesia's exports rose to 8 mnt on new HRC capacity even as Vietnam redirected more output to its own domestic market. South East Asia Iron and Steel Institute continues to flag import penetration from China's surplus capacity, and Middle East energy-supply risk, as key watch items for the region through 2026.

At the same time, India's internal value chain is maturing. From being a bulk exporter of semis and basic flats, the country is moving into high-value segments such as coated steel, Cold Rolled Grain Oriented (CRGO)/Cold Rolled Non grain Oriented (CRNO), and cold heading quality products supported by rising domestic demand from renewables, EVs, and capital goods. Services processing hubs, steel service centres, and port-based delivery models are now central to how Indian steel is positioned globally.

The product story is no longer about tonnes, it is about fit-for-purpose output. Indian mills are investing in segments with higher contribution margins, greater application specificity, and global alignment. Renewable, EV dynamics will be the lateral vector driving unprecedented demand for suitable steel and at the current rate of growth, India too can contribute to the global demand, and these are the frontlines of India's margin migration.

HRC export suitability based on higher price realisation potential

MARKET PRICE COMPARISON: CUSTOMER-DELIVERED PRICES IN INDIA AND HRC IMPORTING MARKETS

Countries / Regions	2024	2025	2026 YTD	Import Volume 2025	
	USD/T	USD/T	USD/T	KTPA	
USA	1024	1058	1090	3050	
Latin America (Brazil)	951	968	985	3700	
Southern Europe	712	735	760	18900	Prices >than home market
N. Europe	712	748	780	760	
India	630	660	690	3150	
Indonesia	602	615	625	3600	
Middle East	599	608	618	11400	
ASEAN - TH / MY / VN	594	600	605	11300	
Asia (Japan + Australia)	560	565	570	NA	Prices <than home market
China	508	495	500	NA	
FOB Baltic or Black Sea port, Russia	490	505	515	NA	

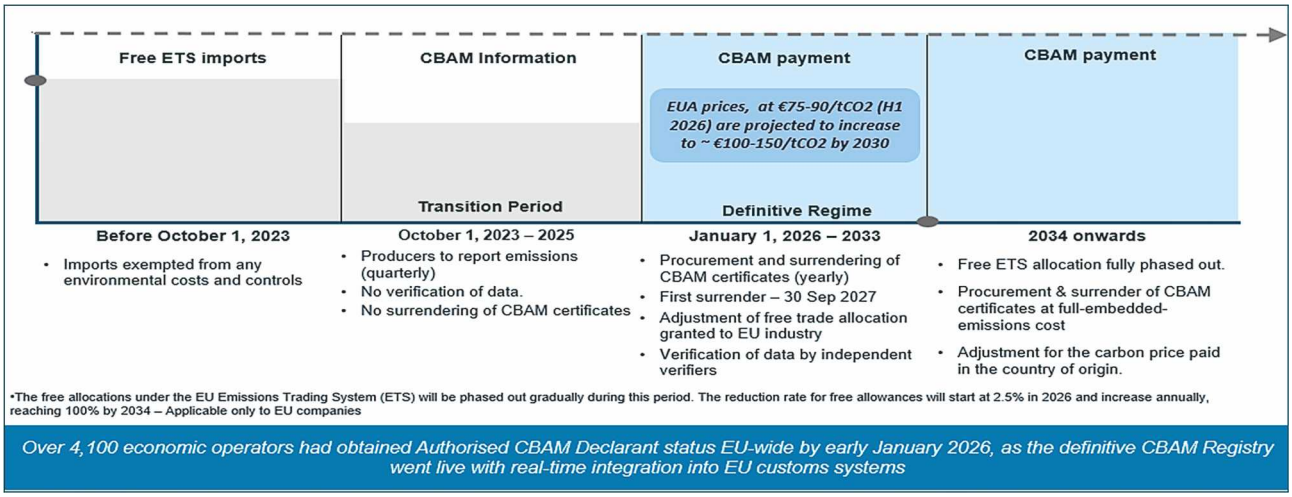
NOTES:

- *Price of HR coil of 2-3 mm thickness, 1200-1300 mm width. The price of 4-6mm is $2-3/tonne lower than the price for HR coil of 2-3mm of the same width.*
- *Standard commodity grade such as grade 235*
- *Delivered to customer = On a truck at the typical customer location with fright and import duty paid*
- *Grade extras: For S350, grade extra for the same thickness will be USD 30-45/tonne over S235 grades.*

Projects in green hydrogen DRI, scrap-based steelmaking, and solar-integrated power use are now moving from pilot stage to industrial scale. Indian mills, while not leading in carbon performance, are crafting a differentiated position: cost-efficient, compliance-ready, and export-relevant.

EU Carbon Border Adjustment Mechanism (CBAM) now in its definitive regime; certificate prices tracked to EU Emissions Trading System (ETS)) auction levels, currently ~EUR 75-90/tCO2 and rising as free allowances phase out.

DEFINITIVE REGIME IN FORCE SINCE 1 JANUARY 2026; FIRST ANNUAL DECLARATION AND CERTIFICATE SURRENDER DUE 30 SEPTEMBER 2027 FOR 2026 IMPORTS



•The free allocations under the EU Emissions Trading System (ETS) will be phased out gradually during this period. The reduction rate for free allowances will start at 2.5% in 2026 and increase annually, reaching 100% by 2034 – Applicable only to EU companies

Over 4,100 economic operators had obtained Authorised CBAM Declarant status EU-wide by early January 2026, as the definitive CBAM Registry went live with real-time integration into EU customs systems

- In China, while the production costs for low-carbon steel are usually Yuan1,000/tonne (USD 140/tonne) higher, the willingness to pay a premium is capped at $20/tonne as of September 2024. The resistance to higher premiums discourages mills from scaling up low-carbon steel production
- Brazil is emerging as a potential first mover in South America. Steelmaker ArcelorMittal Brazil has been offering its low-carbon emission rebar since 2022, projecting a tenfold increase in sales in 2024. The company made its first sale of low-carbon flat steel early in 2024. Currently, these rebars sell at a premium of around 3%-5% over traditional CA50 rebars, with the potential for pricing dynamics to evolve as market share grows. Similar to other regions, key drivers include a growing market demand for sustainable construction materials and regulations pushing for lower emissions. Some automakers like Volvo have also signaled the aim to work with low-carbon steels at their production sites in Brazil. Uptake of a green premium for lower emission steel is varying vastly across the world, the energy transition will continue even if a premium cannot yet be achieved ower than initially expected
- Europe's journey has already started amid more progressive regulatory climate targets, although slowed down by a weak economy. CBAM is expected to increase the appetite for lower emission steel in Europe and outside with Asia preparing to tap into it.
- The current pricing landscape for European carbon accounted steel, however, suggests that if buyers don't have to purchase a carbon-emission reduced steel, they won't.

Attractiveness of the Export markets –Potential Green/ reduced carbon emission steel premium

Importers are required to pay a carbon levy linked to the carbon price payable under the EU Emissions Trading System (ETS) and carbon taxes paid in the exporting country

CBAM Levy (Carbon Tax) Calculation

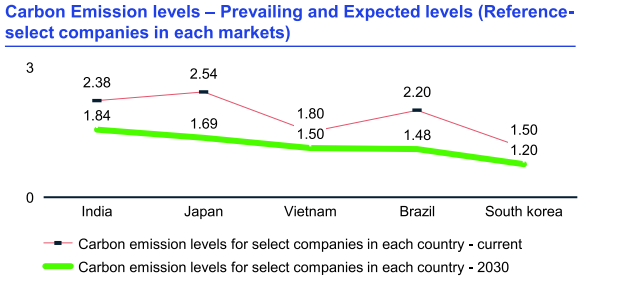
CBAM Levy (Net Carbon Tax) per ton =
Carbon Tax (Carbon Intensity ×EUA Price) –Carbon costs (Carbon Tax * Emission intensity) paid in exporting country

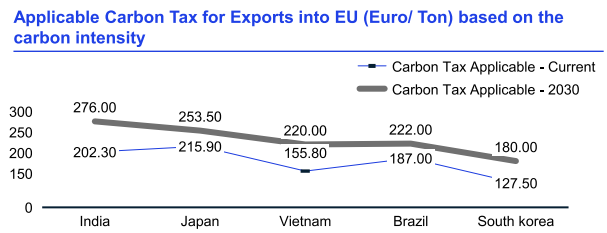
- Amount of carbon dioxide (CO2) emissions per unit of product (typically expressed in tonnes of Co2 per tonne of product).
- Price of EU Emission Allowances (EUA) is determined by the market and reflects the weekly average auction price of allowances–currently at EUR 80/t
- If the exporting country already has a carbon pricing mechanism, the cost paid by the exporter is deducted from the CBAM levy. This avoids double taxation

E.g., Steel produced using BF: Carbon intensity of 2.4 tons CO2 per ton
EUA Price: EUR 80/ton & Carbon Tax in exporting country is EUR 20/ton
- **Net Carbon Tax = (2.4 tonnes CO2 tonne × 80) – (2.4 X 20) = EUR 144 / ton**

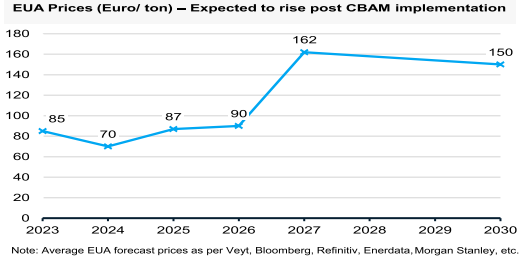
Source: European Commission

Carbon taxes, being tied to EUA prices, are expected to increase alongside EUA prices through 2030





**Note: Carbon taxes for each country has been estimated based on current and future targets for carbon intensity for the key steel players*



Note: Average EUA forecast prices as per Veyt, Bloomberg, Refinitiv, Enerdata, Morgan Stanley, etc.

For the years 2027-2030, Veyt forecasts annual shortages in the order of 100 to 190 Mt worth of EUAs. Veyt predict prices to average EUR 67/t in 2024, jump sharply in 2026, then peak at €162/t in 2027, before stabilizing around EUR 150 in 2030

Re-writing the trade playbook

The United States imported 25.6 mnt of steel in 2023, with flat products making up 35–40% of the total. Galvanized steel continues to be the most in-demand category, with hot-dipped galvanized sheets and strips recording another year-on-year rise in 2024, driven by expanding industrial applications.

Despite this growth, India's direct steel exports to the US across carbon, alloy, and stainless grades—remain negligible, with the trade relationship dominated instead by auto component exports, where India holds a more meaningful share. With the US now imposing a 50% tariff on steel imports, Indian mills face steep barriers in this market. But the bigger strategic risk is cheap steel being diverted into India from other exporters locked out of the US market.

The US tariff regime is therefore both a challenge and a catalyst. While it creates short-term pain by closing off one of the world's largest steel markets, it also forces Indian producers to rethink their positioning leveraging FTAs and multilateral platforms to secure preferential access elsewhere, deploying targeted safeguard duties to defend the home market, and accelerating the shift toward high-value, low-carbon products. For Indian steelmakers, the choice is clear: play defence against incoming surplus, re-imagine export strategies, and embed sustainability into product lines to meet the Global North's compliance standards. The smart players will do all three and in doing so, turn protectionism into a springboard for global relevance.

Strategic action plan for India's steel stakeholders

The path forward rests on three interlinked priorities:

1. Rebalance the portfolio - Capturing the next wave of domestic and export growth will require unlocking the potential of construction and infrastructure, which together are projected to drive over 60% of steel demand growth by 2030. This includes expanding capacity near demand hubs, improving logistics, and promoting steel-framed construction to lift demand by 25 - 30 mnt. Simultaneously, bridging the specialty steel gap—through targeted investment in high-import grades, rapid technology transfer, and alignment with PLI/Make in India—will position India as a global hub for high-value steel, serving both domestic and export markets.
2. Accelerate decarbonization at scale - India's Blast Furnace–BOF scale and resource advantage offer a foundation to produce affordable steel. The dual imperative is to defend cost competitiveness while scaling renewable energy use, preparing for hydrogen-based production, enabling carbon capture, and modernising logistics. Beyond technology, positioning India as a global model for sustainable steelmaking will hinge on supportive policy frameworks, early market creation for green steel, collaborative ecosystems, and proactive measures to mitigate CBAM risks.
3. Secure raw material supply chains - India must build a resilient, quality-focused iron ore and pellet supply chain, scaling pelletization to reach an average of ~38% of BF charge-mix by 2030, expanding beneficiation capacity to address declining high-grade ore availability, and adopting transparent, market-linked pricing. This will protect against price volatility, ensure quality, and support both blast-furnace and DRI-based steelmaking as India scales toward its net-zero goals.

The rest of the report primarily delves into each of the above priorities.

The decade ahead

By investing early, diversifying boldly, and leading the green transition without losing its cost edge, India's steelmakers can capture a durable competitive advantage. With the scale to serve vast domestic needs, the expertise to meet premium export standards, and the agility to adapt to a rapidly changing global landscape, India has the opportunity to cement its position as a globally relevant, competitive, and future-ready force in steel.

02. Rebalancing The Portfolio: Build For Infra Scale, Bridge the Specialty Gap

Over the last decade, India has made significant strides in steel production and consumption, rising to become the world's second-largest producer. Finished steel consumption crossed 138 mnt in FY24, driven primarily by robust demand from construction, infrastructure, automotive, and manufacturing sectors. The infrastructure pipeline spanning transport corridors, urban housing, renewable energy installations, and industrial parks offers a sustained growth runway for construction-grade and long products, presenting a clear opportunity to rebalance production portfolios towards high-volume, domestic-demand segments that ensure stability and scale.

However, this domestic strength coexists with a structural gap in the specialty and high-performance steel space. India's steel trade profile reveals an increasing reliance on imported value-added steels including advanced high-strength steels, corrosion-resistant grades, and application-specific alloys while exports remain concentrated in lower-margin or semi-finished products. This imbalance highlights the need to build capabilities in premium, specification-driven products that cater to sectors like automotive, defence, shipbuilding, and renewable energy, thereby bridging the specialty steel gap.

In this section, we cover India's sector-wise steel consumption and product-wise trends in production and consumption, followed by an in-depth analysis of latent demand in infrastructure as India's next big steel opportunity. The discussion then transitions to the Production-Linked Incentive (PLI) scheme for specialty steel, examining its role in accelerating the shift towards high-spec, value-added products that can enhance India's position in the global steel value chain.

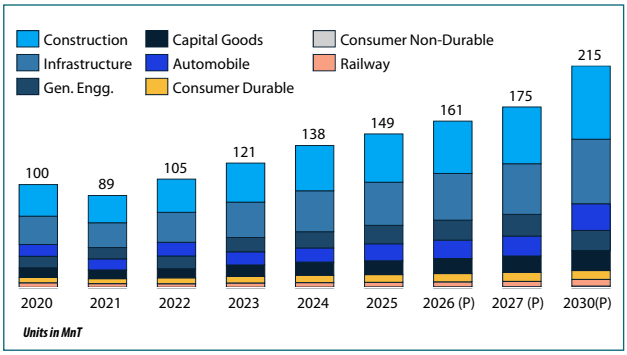
MAPPING THE END-SECTOR DEMAND LANDSCAPE: UNDERSTANDING SECTORAL TRENDS SHAPING STEEL CONSUMPTION

India's steel demand is anticipated to reach 192 mnt by 2030, supported by a robust compound annual growth rate (CAGR) of 6%. Much of this demand will be led by the construction and infrastructure sectors, together projected to account for 60% to 63% of total consumption.

Additionally, the automobile and general engineering industries are expected to contribute a combined share of approximately 23%, underscoring their growing importance within the domestic steel market.

According to the latest data, India's steel demand reached 149 mnt in FY25, rising from 136 mnt in FY24. The construction sector accounted for 47 mnt (31%) of this demand, while infrastructure contributed 42 mnt (28%). Looking ahead to FY30, demand from construction is expected to grow to 64 mnt (33%), and from infrastructure to 55 mnt (29%), driven by sustained momentum in large-scale public and private sector projects.

India's steel consumption by end-use sector

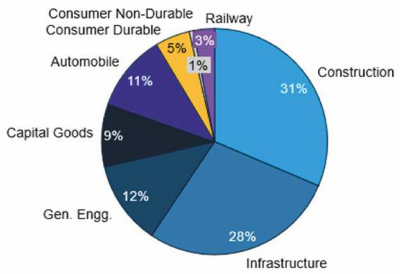


The surge in steel demand is being propelled by numerous government-led initiatives. Major projects like Bharatmala, Sagarmala, and dedicated freight corridors, along with the expansion of Indian Railways and Pradhan Mantri Awas Yojana (PMAY), are central to this growth. Additionally, the ongoing development of ports, airports, metro rail networks, the expanding renewable energy sector, and Production Linked Incentive (PLI) schemes across diverse industries are significantly boosting demand.

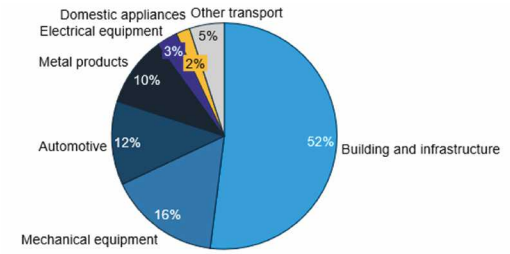
END-SECTOR DEMAND PATTERNS: INDIA VS GLOBAL

In FY24, India consumed 138 mnt of steel, led by construction (31.8%) and infrastructure (28.8%), highlighting strong government investment in urban and large-scale projects. General engineering (11.4%) and capital goods (9.2%) also drove demand, reflecting industrial growth. The automotive sector (10%) maintained steady consumption, while consumer goods, including durables and non-durables, had a smaller share. Railways (3.1%), though smaller, are expected to grow with ongoing modernization.

India's domestic steel consumption - FY' 26



Global Steel Deman - 2025



Globally, steel demand reached 1,742 mnt in 2025, with building and infrastructure (52%) as the largest users. Mechanical equipment (16%) and automotive (12%) followed, supported by manufacturing needs. Other contributors included metal products (10%), electrical equipment (3%), home appliances (2%), and other transport (5%).

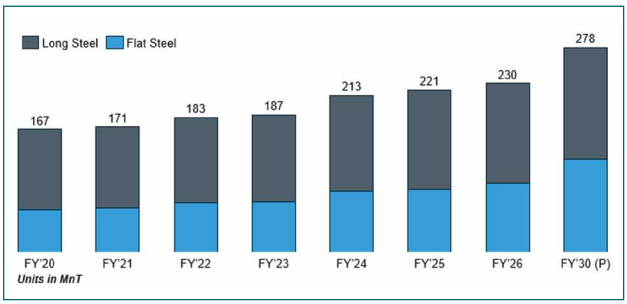
The key difference between India and global steel consumption lies in the stage of economic development and industrial maturity. India's steel demand is currently infrastructure-heavy and cost-driven, while global demand is more industrialized and innovation-oriented. As India continues to urbanize, industrialize, and modernize its economy, its steel demand profile is expected to gradually shift toward higher-value products and specialty steels, aligning more closely with global consumption patterns.

LONGS VS FLATS: SHIFTS IN LONG AND FLAT PRODUCT PRODUCTION AND CONSUMPTION IN INDIA

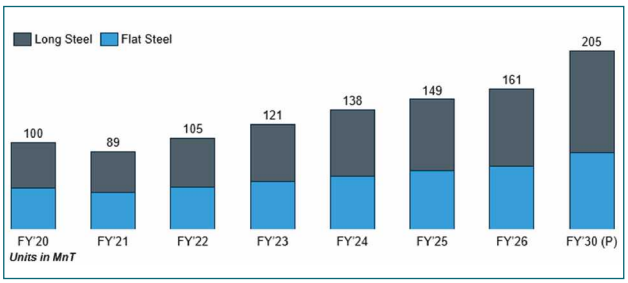
India's rise in the global steel industry is closely linked to the changing dynamics of domestic demand across flat and long steel products. As the country's economy expands and urbanizes, long products, used mainly in infrastructure and construction, is seeing strong demand driven by projects like highways, metro rail, and affordable housing. At the same time, the growth of sectors like automotive, appliances, and engineering is spurring rising demand for flat products such as coated, cold-rolled, and high-strength steels.

Together, these shifts have not only expanded India's steel capacity but also diversified its product mix, reinforcing its position as the world's second-largest steel producer.

Flat and long steel products installed capacity



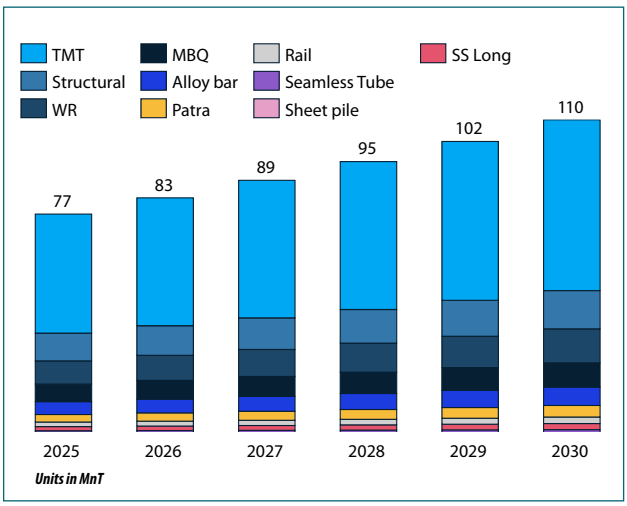
Flat and long steel products production



TMT bars remain the cornerstone of India's long steel product segment, accounting for much of consumption due to their critical role in the construction and infrastructure sectors.

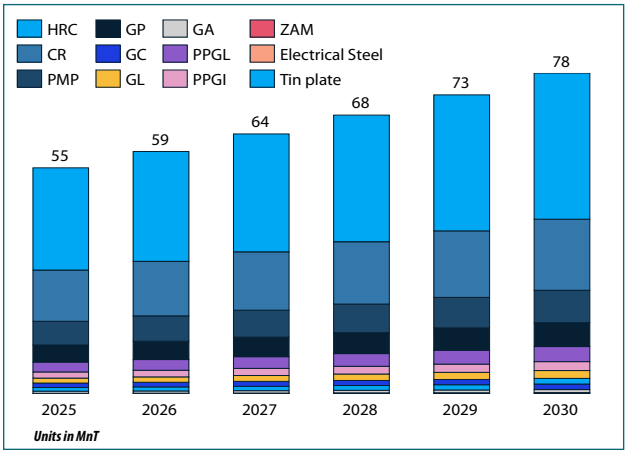
- TMT bar consumption in India stood at 42 mnt in FY25, driven by strong construction activity.
- Demand is projected to reach 75 mnt by FY33 (CAGR ~7%), supported by the growing use of high-strength, seismic-resistant bars in infrastructure and urban real estate.

Long steel products demand



India's flat steel demand is projected to grow 8-9% in 2025, driven by infrastructure, housing, and engineering sectors. However, rising imports, especially from China, pose challenges for domestic players. While local prices stay stable, global HRC prices are under pressure, prompting cautious optimism amid shifting trade dynamics.

Flat steel products demand



NORTH VS SOUTH: MAPPING INDIA'S DIVERGENT STEEL PRODUCTION AND CONSUMPTION PATTERNS

As of FY'25, India's steel industry operates at a capacity of 221 million tonnes (mnt), with current finished steel production at 145 mnt, reflecting strategic headroom for future growth.

LATENT DEMAND IN INFRASTRUCTURE: INDIA'S NEXT BIG STEEL OPPORTUNITY

India's infrastructure sector is poised for transformational growth, driven by rapid urbanization and robust government-led initiatives. Beneath visible progress lies substantial latent demand, unrealized but foreseeable requirements across housing, transport, utilities, and logistics. This hidden pipeline represents a massive opportunity for the steel industry, which forms the backbone of infrastructure development.

Construction and infrastructure market share and expansion

Sector	Steel Consumption 2025 (in mnt)	Steel Consumption 2030 (in mnt)	Key Segments of Sector	Growth Drivers
Construction	47	68	Housing, commercial space	Strong economic growth, national housing schemes
Infrastructure	42	59	Roads, highways, railways	Strong growth in urban infrastructure

ONGOING / UPCOMING PROJECTS IN THE INFRASTRUCTURE SPACE

India's ambitious infrastructure push has created significant latent steel demand across flagship programs, demand that is yet to fully translate into steel consumption due to planning, execution, and investment cycle lags. The following summarizes key demand signals by project and sector.

Sector	Ongoing /pipeline projects
Roads & Highways	Highways: 200,000 km target by FY 2037; Bharatmala covers 83,677 km
Rail & Metro	INR 2.5 lakh cr capex (FY25); metro network crossed 1,070 km in 2026 (up from 902 km in 2024), with over 900 km more under construction
Housing (PMAY-U/R)	8.7 mn units delivered; 10 mn more needed by 2030
Urban Infrastructure	AMRUT 2.0 and Smart Cities
Water, Sanitation & Irrigation	Tap water to 15.4 cr homes under Jal Jeevan; INR 10,211 cr for Dam Rehab
Industrial Corridors	12 National Industrial Corridor Development Programme nodes approved with INR 28,602 cr allocation

National Infrastructure Pipeline (NIP) – The NIP, an INR 160 lakh crore initiative comprising over 9,000 projects, is the single largest driver of steel demand in the country. It covers a broad range of sectors, including roads, urban infrastructure, energy, railways, ports, and logistics.

- As of FY25, the indicative steel demand from NIP is ~149 mnt, with projections reaching 190–200 mnt by 2030.
- Steel usage is concentrated in structural steel for buildings, rebars in roads and metros, and fabricated steel in logistics and warehousing.

Bharatmala Pariyojana – Bharatmala Phase I aims to develop 34,800 km of national highways, of which over 22,590 km had been completed as of 31 March 2026, with the remaining stretch targeted for completion in FY27.

- The estimated steel demand for the programme was 20 mnt as of FY20.
- Mumbai Trans Harbour Link (MTHL): 165,000 tonnes of rebar, 96,250 tonnes of structural steel, 70 spans of 4.7 km.

Sagarmala Program - Focused on port-led development, the Sagarmala initiative targets 802 projects, with 247 already completed. These include modernization of existing ports, construction of new greenfield ports, and development of coastal infrastructure.

- Structural steel used for terminals, gantries, jetties, quay walls with an estimated 13–15 mnt from port infra projects..

Smart Cities Mission - Out of 100 designated smart cities, 100% have completed their city-level planning, with project execution levels averaging around 60–70%.

- Steel-intensive components such as elevated road corridors, underground utilities, and transit-oriented development (TOD) hubs are ongoing.

Dedicated Freight Corridors (DFCs) - India's DFC programme includes the Eastern and Western corridors, covering over 3,300 km. While major stretches are operational, associated industrial and logistics zones along these corridors are still under development.

Urban Metro & RRTS projects - Multiple metro projects are underway in Tier-1 and Tier-2 cities, with steel demand arising from viaducts, rolling stock, and stations.

- The expansion of metro networks, coupled with new Regional Rapid Transit Systems (RRTS), is expected to unlock further demand, particularly for structural steel, stainless steel (for coaches and interiors), and special grades for rail systems.

Defence & aerospace corridors - Defence industrial corridors in Uttar Pradesh and Tamil Nadu are in the early stages of development.

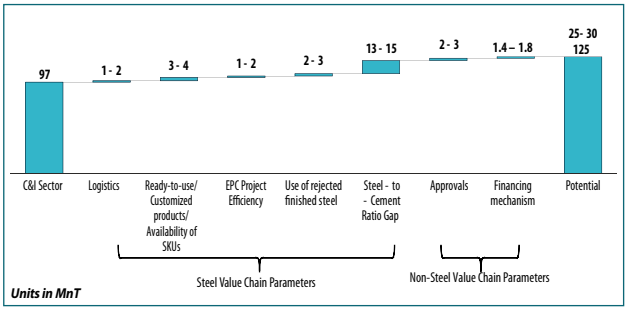
- These projects require high-grade alloy and specialty steels for equipment fabrication, warehousing, and auxiliary infrastructure. The slow pace of capex roll-out suggests a build-up of latent demand, which could accelerate as procurement and private participation increase.

Renewable energy parks & EV ecosystem - Large-scale solar and wind power parks, battery storage units, and EV component manufacturing zones are emerging across states like Gujarat, Rajasthan, and Tamil Nadu.

- These projects generate demand for galvanized and electrical steels. The full demand potential remains under-tapped due to regulatory and policy bottlenecks, indicating strong latent consumption over the medium term.

India's C&I steel consumption is currently constrained by inefficiencies across the value chain — from logistics and product customization to project execution, financing, and approval processes. These systemic bottlenecks keep usage well below potential, despite strong underlying demand. For example, suboptimal rail logistics, limited availability of ready-to-use SKUs, and slow EPC project turnaround are delaying deployment and inflating costs.

Possible latent demand in the construction & infrastructure space

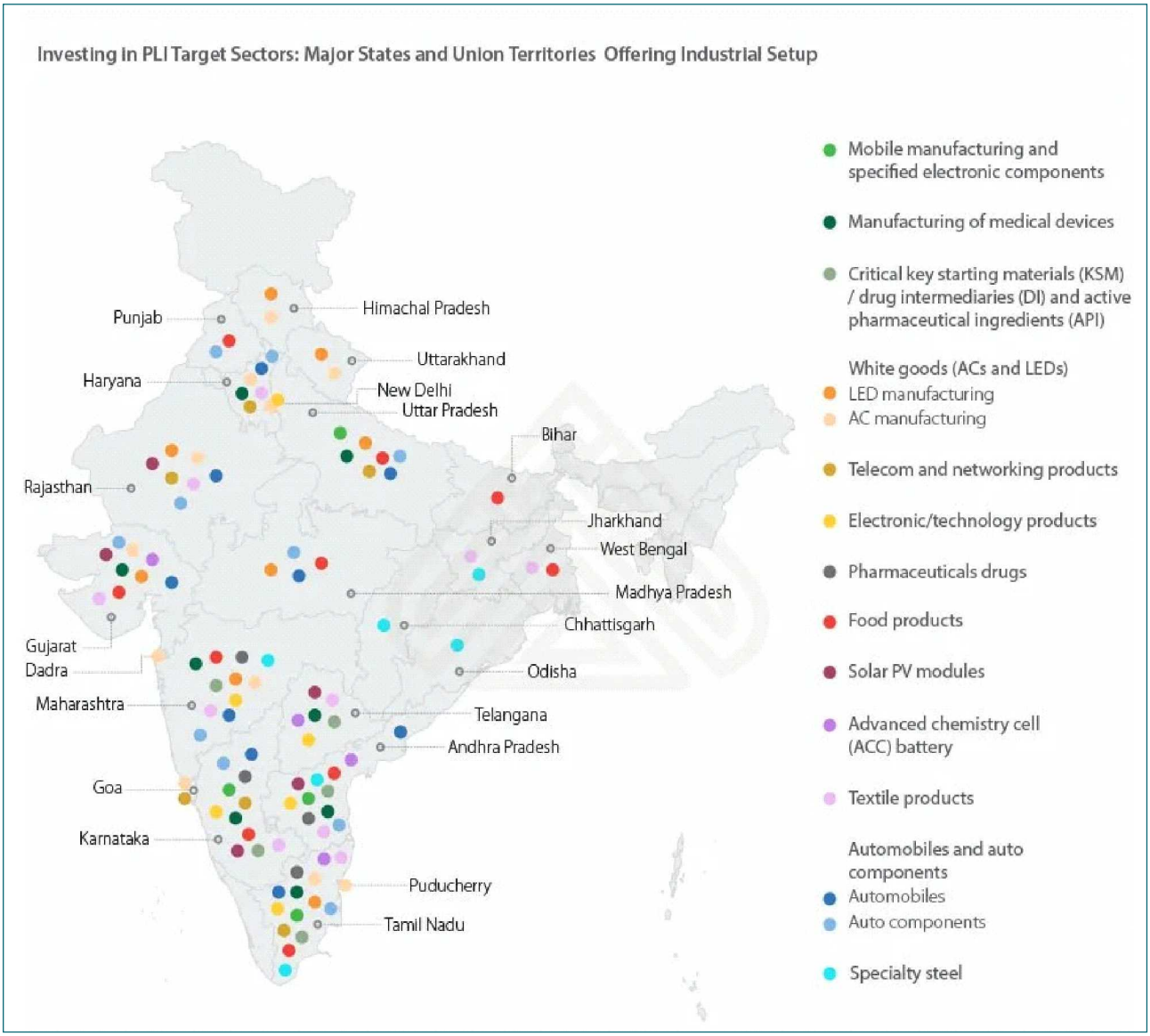


Addressing these frictions could unlock an additional 25-30 mnt of demand, a 30% uplift over today's consumption. Targeted measures such as optimizing freight networks, expanding tailored steel offerings, improving credit access for projects, and aligning cement-steel usage ratios can rapidly accelerate adoption. By closing these operational gaps, the C&I segment can shift from incremental growth to a step-change in demand, unlocking a major lever for the broader steel sector.

TRANSITIONS TO THE PLI SCHEME FOR SPECIALTY STEEL DRIVING INDIA'S SHIFT TO HIGH-SPEC, VALUE-ADDED PRODUCTS AND STRENGTHENING ITS GLOBAL POSITION

The map below shows the industrial distribution across major Indian states and union territories under the PLI (Production-Linked Incentive) scheme, highlighting diverse sectoral strengths.





Southern states like Tamil Nadu, Karnataka, and Andhra Pradesh have a strong presence in sectors such as automobiles, electronics, specialty steel, and textiles, making them key manufacturing hubs.

- Karnataka and Tamil Nadu are major steel-consuming states, thanks to their strong automotive and manufacturing sectors.
- Tamil Nadu's growing electric vehicle (EV) sector is increasing demand for electrical steel, while its expanding food processing industry is boosting stainless steel usage.
- Kerala is also emerging with notable infrastructure investments, 12 national highway projects covering 105 km are underway, valued at over INR 1,464 crore. KINFRA is developing nearly 4,900 acres in the Kannur district for industrial parks. The state targets INR 3 trillion in investments over the next 3 years, with a focus on tourism, ports, industrial corridors, and IT sectors

In the north, states like Uttar Pradesh, Haryana, and Punjab are active in electronics, white goods, and medical devices, supported by rising infrastructure and local demand.

- Maharashtra and Gujarat stand out as major industrial states with investments spread across auto parts, food processing, solar energy, and pharmaceuticals.
- Madhya Pradesh and Chhattisgarh are developing across sectors such as electronics, food, and solar power. Similarly, States like Odisha and West Bengal are more focused on textiles, steel, and food products
- Bihar is on a strong growth path, with over INR 35,000 crore planned for development projects, and another INR 1.5 lakh crore for the oil and gas sector

- Himachal Pradesh is targeting INR 20,000 crore in investments focused on manufacturing, tourism, energy, construction, and housing.

INDIA'S STEEL SECTOR MUST PAIR INFRASTRUCTURE SCALE WITH HIGH-VALUE SPECIALTIES TO SECURE FUTURE-READY LEADERSHIP

As India moves toward its vision of becoming a USD $5 trillion economy and a global manufacturing powerhouse, the steel industry must recalibrate its trajectory. Traditional demand drivers like construction and infrastructure will continue to play a significant role, but emerging sectors such as electric vehicles, precision manufacturing, defence, renewables, and green infrastructure will shape the next phase of consumption. These sectors demand high-performance materials, including electrical steel, high-strength alloys, and specialty-grade stainless steel, segments where the domestic supply still lags behind demand.

To stay competitive and self-reliant, India's steelmakers need to shift focus from just expanding capacity to enhancing capability. This includes targeted investments in R&D, accelerated development of value-added products, and stronger linkages with end-use industries to co-engineer next-generation solutions. Regional clusters must be developed not just based on where steel is produced, but where advanced demand is emerging, such as EV belts, electronics hubs, and defence corridors.

Looking ahead, the ability of India's steel sector to align with this evolving demand spectrum will determine whether it remains a volume leader or evolves into a value innovator. Strategic foresight, policy support, and collaboration between industry and technology players will be critical in ensuring that India doesn't just meet its steel targets in tonnes, but meets them in terms of impact, competitiveness, and future-readiness.



03. Accelerate Decarbonization at Scale - From Compliance To Competitive Advantage

India's steel sector is expanding to meet both domestic infrastructure needs and global competitiveness requirements. However, the dominant route for this growth the coal-based BF–BOF pathway brings with it a parallel responsibility: to align with the country's sustainability goals.

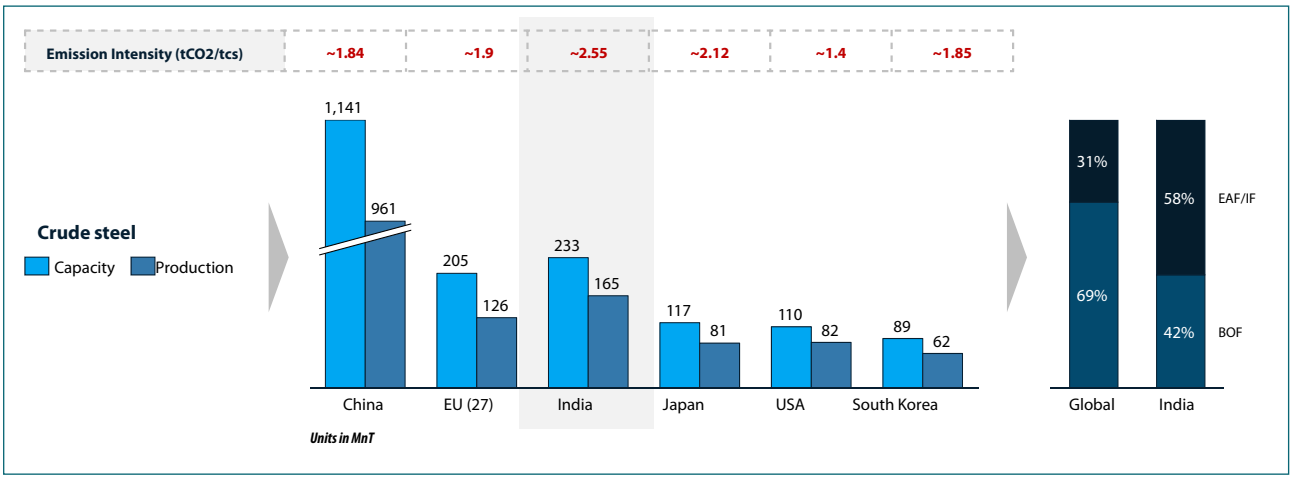
This chapter explores India's steelmaking journey through two lenses: BF compulsion, arising from domestic resource realities and technological readiness, and green steel obligations, shaped by evolving global trade norms, environmental concerns, and emerging low-emission technologies.



INDIA'S GLOBAL FOOTPRINT AND EMISSIONS PROFILE

India is already the world's second-largest steel producer and among the fastest-growing. However, it also faces one of the highest emission intensities per tonne of steel. India's average CO_2 emissions from steelmaking stand at 2.55 tCO_2 per tonne of crude steel (tcs) significantly higher than global leaders like the US (1.4) or the EU (~1.9), primarily due to its coal-heavy BF-BOF route and limited scrap usage.

GLOBAL COMPARISON – STEEL PRODUCTION & EMISSIONS INTENSITY (2025)

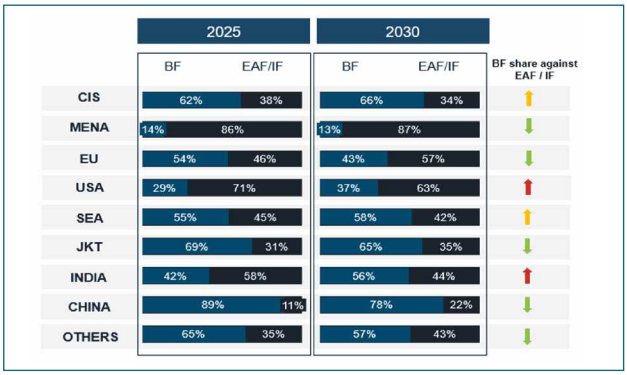


India's high emission intensity is driven by multiple factors:

- Heavy reliance on coal-based BF-BOF route for both brownfield and greenfield expansion
- Limited availability and use of high-quality scrap in secondary steelmaking
- High specific energy consumption in both BF-BOF and DRI-EAF/IF routes
- Low penetration of Best Available Technologies (BATs)

This makes it imperative for India to balance its growth with strategic emissions control.

BOF VS EAF / IF SHARE BY REGION (2025 VS 2030 PROJECTION)



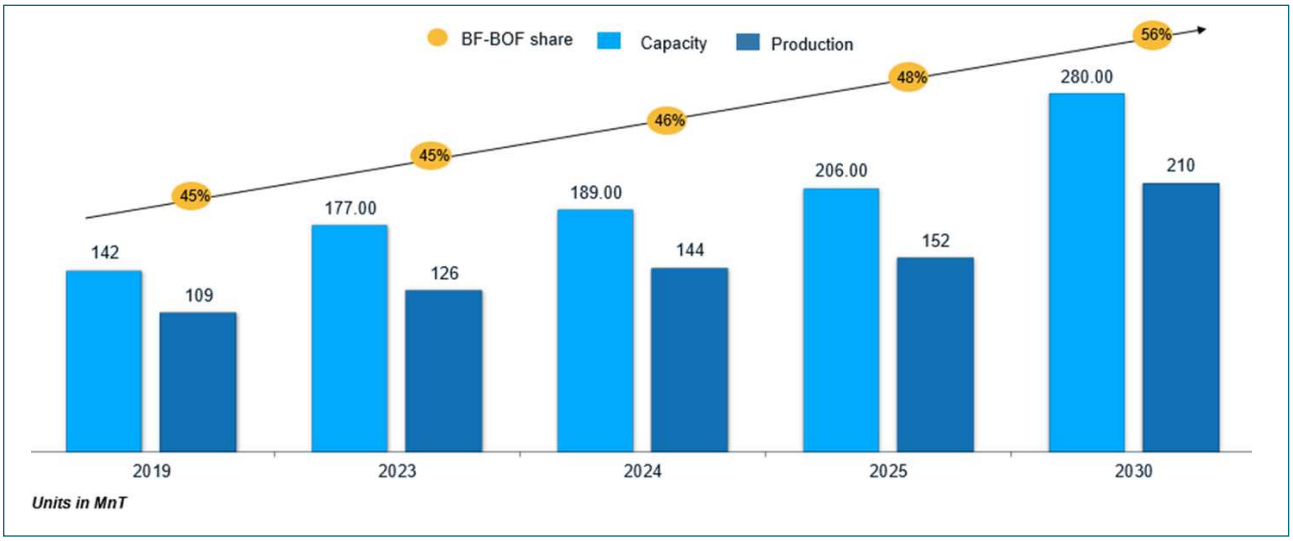


India's projected increase in BF share from 42% to 56% contrasts with the global trend of increasing EAF/IF share underscoring a divergence in technology pathways.

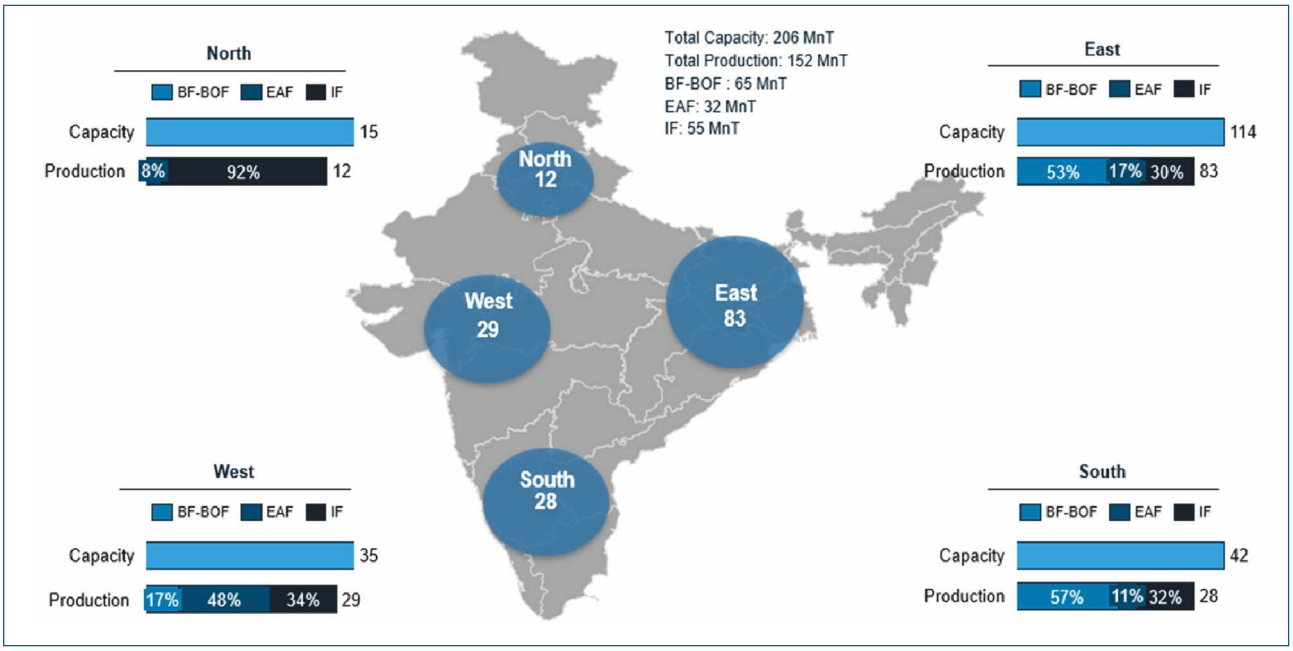
SCALING UP CAPACITY: FUTURE GROWTH BY REGION

India's steel capacity is projected to reach 270-280 mnt by 2030, just shy of the 300 mnt target under the National Steel Policy. This expansion is being driven by both brownfield and greenfield projects, largely based on the BF-BOF route (~56% by 2030).

STEELMAKING CAPACITY EXPANSION (INDIA) - BF SHARE CAN INCREASE TO 55%



INDIAN STATE WISE CRUDE STEEL CAPACITY



Eastern region: The steel heartland with 114 mnt capacity and 83 mnt production, led by BF- BOF-based integrated plants (44 mnt).

Western region: 35 mnt capacity, 29 mnt output, marked by a balanced use of BF-BOF, EAF, and IF—reflecting a strong secondary steel presence.

Southern region: 42 mnt capacity, 28 mnt production, dominated by integrated BF-BOF plants, aided by port access and raw material proximity.

Northern region: The smallest contributor with 15 mnt capacity and 12 mnt output, relying entirely on scrap-based EAF and IF, driven by mini and secondary mills.

MANAGING EMISSIONS IN A HIGH-GROWTH ENVIRONMENT

India's rapid steel sector expansion comes with a parallel challenge—managing and reducing CO_2 emissions amid surging production volumes. As the country advances toward its 300 mnt crude steel capacity target by 2030, reducing the emissions intensity of steelmaking is not only an environmental imperative but also essential for ensuring the industry's long-term global competitiveness.

The high emissions intensity in India's steel sector stems from several structural and operational factors:

- Heavy reliance on coal-based BF-BOF route
- Low-grade iron ore and high-ash domestic coking coal increasing energy consumption
- Limited scrap availability and low EAF adoption
- High energy consumption due to outdated technologies and infrastructure limitations

To overcome these challenges, India is deploying a combination of levers:

1. **Energy efficiency programmes**
    - The PAT scheme delivered ~6.1 mnt of oil equivalent savings by 2022.
    - Yet, Indian plants still consume 6.0–6.5 Gcal/tcs on average—above the global benchmark of 4.5–5.0 Gcal/tcs.
2. **Adoption of Best Available Technologies (BATs)**
    - BAT adoption remains limited, especially in secondary steel units, constrained by capital cost and retrofitting feasibility.
    - Policies are in place to mandate BATs in all new greenfield and brownfield projects.
3. **Waste heat recovery & process optimisation**
    - Steel plants are recovering flue gases and using top-pressure turbines. AI, ML, and IoT are improving furnace energy performance.
4. **Grid decarbonization and renewable integration**
    - Steel's power demand is expected to double by 2030.
    - Grid-based renewable use is rising, and stronger RPO mandates can accelerate this further.
5. **Scrap utilisation and circularity**
    - Strengthening domestic scrap generation and easing imports will enable more EAF-based production.
    - The government is working on policies to formalise scrap collection and recycling chains.

Together, these efforts represent a mindset shift from viewing emissions as inevitable to using decarbonisation as a competitive advantage.

Despite these gains, India's average BF-BOF emissions (~3.83 tCO_2/tcs) remain well above the global average, calling for structural decarbonization to meet future climate and trade realities.

GREEN STEEL: INDIA'S STRATEGIC PATHWAY FOR SUSTAINABLE GROWTH

India has committed to reduce its emissions intensity by 45% by 2030 and achieve net-zero by 2070. With the steel sector accounting for ~12% of emissions, decarbonisation in steelmaking is critical to meet this commitment.

Global climate policies are increasingly linking carbon content to trade access. Mechanisms such as the EU CBAM – now in its definitive, financially binding phase since January 2026 – alongside a UK CBAM due in January 2027 and the US Buy Clean initiative, are already affecting Indian exports.

GLOBAL GREEN STEEL POLICIES & IMPACTS

Region	Policy/Initiative	Implication for Exporters
EU	Carbon Border Adjustment Mechanism	Emission-linked import tariffs (definitive regime, in force since Jan 2026)
USA	Buy Clean Act	Preference for low-carbon steel
Japan	Technology export & alliances	Collaboration opportunities
Sweden	HYBRIT pilot	Hydrogen-based DRI-EAF scale-up

GLOBAL TECHNOLOGY BENCHMARKS IN STEELMAKING

To further understand low-carbon steelmaking options, it's useful to compare them side-by-side in terms of emissions, reduction potential, and global adoption.

STEELMAKING TECHNOLOGY COMPARISON - EMISSIONS INTENSITY AND ADOPTION

Steelmaking Routes	Description	Emissions Intensity (tCO2/tcs)	CO2 Emission Reduction Potential %	Companies using this technology
Best Available Technology (BAT) BF-BOF	Adopting best-in-class technologies can enhance the efficiency of conventional BF-BOF technology	2.08	25	JSW Utkal Steel, Odisha 21
BAT BF-BOF + CCUS	Implementing CCUS in BAT BF-BOF can further reduce emissions, with a capture efficiency of 90%	0.61	75	POSCO, Baowu Steel Group, Tata Steel
Scrap-Based EAF	Scrap-based EAF is low in emissions, but scrap availability is a challenge, especially in India	0.53	85	Nippon Setouchi Works, Japan
DRI-EAF + Natural Gas	Natural gas serves as the main energy and reductant source but requires significant equipment changes like shafts	1.38	50	Arcelor Mittal, Hamburg, Germany
DRI-EAF + H2	Hydrogen is the primary reductant, but some natural gas is needed to keep the system running. The produced DRI is then processed in the EAF	0.67	85	LKAB, Vattenfall & SSAB's HYBRIT project at Lulea, Sweden
DRI-EAF + CCUS	The natural gas-based DRI-EAF is equipped with CCUS, achieving a 90% capture efficiency	0.41	85	The Al Reyadah Project, Abu Dhabi, Emirates Steel Industries
Smelting Reduction (Hisarna)	Smelting reduction produces liquid hot metal from iron ore and coal, bypassing the coke-making step of traditional BFs. It involves injecting iron ore fines, pure oxygen, and coal into a cyclone converter furnace	2.35	30	Tata Steel, Rio Tinto & ULCOS (Ultra-low CO2 steelmaking)
Smelting Reduction + CCUS efficiency	Smelting reduction is integrated with CCUS technology, achieving 90% carbon capture	0.36	80	Netherlands' North Sea Canal Area

India is exploring multiple technologies for emissions reduction, each with its own maturity and investment profile.

INDIAN LOW-CARBON STEELMAKING TECHNOLOGY

Route	CO2 Reduction	India Status	Enablers and Needs
Scrap-EAF	60–80%	Underused	Scrap ecosystem, import facilitation
Hydrogen DRI-EAF	70–90%	Pilots initiated	Policy push, infra, cost curve
BF-BOF + Carbon Capture	30–50%	Early-stage R&D	Storage infra, tech collaboration
RE-powered steelmaking	10–20%	Growing in SSIs	Grid access, captive RE financing

With Renewable Energy's (RE) share targeted to rise from 7.2% (2022) to 43% by 2030, the steel sector's emission intensity could decline measurably

EMISSION REDUCTION VIA RENEWABLE ENERGY (RE)

Scenario	RE Share (%)	Emission Intensity (tCO2/tcs)
Current (2022)	7.2%	2.54
BAU Scenario (2030)	16.3%	2.46
Moderate (30% RE)	30%	2.38
Ambitious (43% RE)	43.33%	2.35

Capex required: ~INR 73,861 cr by 2030 for 43% RE penetration in steel.

Green hydrogen: Laying the groundwork for the future

Hydrogen pilots are underway in India-

- Tata Steel: BF hydrogen injection
- JSW Steel: Shaft furnace planning

Hydrogen integration potential

Application	CO2 Reduction	Breakeven Price (USD/kg)	Barriers
BF hydrogen injection	~7–8%	0.48–0.88	Infra, safety, volume
Shaft furnace blend	~340 kg/tcs	0.75–2.02	Technology readiness

While not yet at commercial scale, these efforts are vital to build capacity and know-how for the 2030s.

DECARBONISING BF-BOF THROUGH CARBON CAPTURE, UTILISATION AND STORAGE (CCUS)

CCUS is a critical lever for reducing emissions from India's BF-BOF steelmaking route, where conventional decarbonisation strategies like electrification or hydrogen are not immediately viable. As per estimates, 56% of emissions from existing steel technologies can only be mitigated through CCUS, making it indispensable for deep decarbonisation. However, its adoption is constrained by economic, technical, and policy-related challenges

Key considerations:

- High capture cost: CO_2 capture from BF flue gas (15-20% concentration) costs $45–60/tonne, compared to a target of <$20/tonne.
- Limited storage readiness: India's theoretical storage potential is 395-614 GT, but only 101–359 GT is likely realisable due to limited site characterisation.
- Economic trade-offs: CO_2 utilisation in green hydrogen-based chemicals can cost $300–500/tonne CO_2, increasing steel prices by up to 100%.

To enable deployment, India must invest in CCUS pilots, define policy and governance frameworks, and promote non-green hydrogen CCU applications such as carbonates or CO_2-based iron reduction.

ENSURING COMPETITIVENESS DURING TRANSITION

India's steel growth model has leaned on BF-BOF due to its scale benefits and raw material linkages. Yet, emerging trade norms, climate policies, and ESG investor expectations mean that diversifying into green routes is no longer optional – it's essential.

INDIA'S CAPACITY OUTLOOK AND TRANSITION LEVERS

Parameter	Value
Capacity in development	258 mnt
BOF share in new projects	~69%
Age <20 years (operating BF)	~72%
Old BF units >40 years	~11%
Stranded asset risk (est.)	$124–187 bn

SUPPORTING A FAIR AND FORWARD-LOOKING TRANSITION

India has the opportunity to make its steel journey both growth-oriented and sustainable. A blend of domestic policy reforms, global collaboration, and investment facilitation will be key.

- **Green steel certification:** Create a voluntary, tiered framework aligned with global standards.
- **Public procurement guidelines:** Encourage green steel use in infra and rail projects.
- **Scrap policy enhancement:** Promote organized collection, allow high-quality imports.
- **Financing tools:** Green bonds, concessional loans for EAF and hydrogen projects.
- **Tech partnerships:** Leverage alliances with Japan, EU, and Nordic countries for hydrogen and Carbon Capture Utilisation and Storage.

POSITIONING INDIA AS A GLOBAL MODEL FOR SUSTAINABLE STEELMAKING

India's recent regulatory push across domestic production, imports, and exports reflects a broader strategy to build a globally competitive, self-reliant, and sustainable steel sector.

The rising global protectionism, decarbonization mandates like the EU's CBAM, and intense competition from low-cost exporters like China, India is aligning its policies to:

- Secure domestic supply chains.
- Enhance the quality and sustainability of steel production.
- Protect the domestic market from unfair trade practices.
- Prepare exporters for evolving international standards and carbon costs.
- Drive investments into high-grade, value-added, and green steel segments.

India's comprehensive strategy underscores its ambition to emerge as a global steel leader by aligning policies that prioritize quality, sustainability, and global competitiveness.

India's dual exposure to carbon pricing regimes like CBAM and protectionist trade barriers from key economies underscores the need for a strategic, multi-pronged policy and regulations, encompassing the following elements:

1. **Domestic steel production policy**

DMI&SP Policy (Make in India Mandate):

- All steel for government contracts above INR 5 lakh must be fully melted and poured in India. Tenders up to INR 2,000 cr are reserved for domestic players with ≥50% local value addition.
- The policy gives MSMEs and Indian companies a fair chance to participate in large public infrastructure projects, promoting inclusive growth and encourage domestic manufacturing.

PLI scheme for specialty steels (Rounds 1.0-1.2, 2021 onwards):

- New incentives under PLI 1.1 drive investment in high-grade, value-added steel segments.
- The PLI 1.1 scheme incentives for high-grade, value-added steel aim to accelerate domestic capacity, curb imports, boost exports, drive innovation, and align with India's strategic and sustainable growth goals.
- PLI 1.2 (latest round, Feb 2026): MoUs signed for 85 projects across 55 companies, committing ~INR 11,887 crore and adding 8.7 mnt of specialty steel capacity by FY31, spanning 22 product categories including Cold Rolled Grain Oriented, coated steel, and stainless products. Incentives of 4-15% run for five years from FY26. Combined, PLI 1.0-1.2 now represent over INR 55,000 crore in committed investment.

National steel capacity targets:

- 300 mnt/year crude steel capacity by 2030
- 500 mnt by 2047
- Per capita consumption to rise from ~98 kg to 160 kg by 2030.

Strict quality controls:

- Over 150 BIS standards now govern steel products across the value chain.
- This certain quality checks will ensure safety, quality, sustainability, and global alignment building a robust, future-ready steel sector that supports India's strategic growth.

2. **Steel import regulations**

Mandatory BIS & QCO compliance (effective 16 June, 2025):

- All steel imports finished, semi-finished, and key raw materials must comply with BIS standards under Quality Control Orders (QCOs).
- Non-compliant shipments will be denied by customs clearance.

Safeguard duties against dumping:

- A 12% provisional duty imposed on certain imports, especially from China to protect domestic producers from low-cost dumping.

Extended BIS to raw materials:

- BIS norms will now be applied to slabs, billets, and HR coils, eliminating loopholes in intermediate-stage imports.

Import monitoring & traceability:

- Mandatory filing through the Steel Import Monitoring System (SIMS) with full traceability via test certificates. No exemptions will be allowed under QCOs.

Clampdown on transshipments:

- Imports routed through neighbouring countries using non-compliant Chinese raw materials will be restricted.

3. **Steel export regulations**

Domestic standard enforcement:

- Exports must comply with BIS standards and certified origin.
- Exporters must provide test certificates and detailed documentation to verify compliance with importing countries' regulations.

CBAM Compliance -- Definitive Regime (In force since 1 January 2026):

- The EU CBAM moved from its reporting-only transitional phase into a financially binding definitive regime on 1 January 2026. EU importers must now hold Authorised CBAM Declarant status, and Indian exporters are expected to supply installation-level, third-party-verified embedded-emissions data through the EU's CBAM Registry so importers can complete annual declarations.

- Certificate prices track EU ETS allowance (EUA) auction levels, which have traded in roughly the EUR 75-90/tCO2 range through H1 2026 (set as a quarterly average in 2026, moving to a weekly average from 2027). Using default emission values, Indian BF-BOF hot-rolled coil carries an estimated CBAM cost of around EUR 250/tonne; India, together with Turkiye, China, Ukraine and Russia, is projected to account for over half of total CBAM-linked costs by 2030, making it one of the most exposed exporters to the mechanism.
- Recommended pathway for Indian exporters: Register installations on the EU CBAM Registry to share verified emissions data directly with EU buyers; commission third-party verification of direct (and, where relevant, indirect) emissions; track EUA/CBAM certificate prices each quarter to model landed-cost exposure; and evaluate any deductions available for a domestic carbon price paid in India, ahead of the first annual declaration and certificate surrender due 30 September 2027 for 2026 imports.
- A parallel UK CBAM takes effect on 1 January 2027 under the Finance Act 2026, covering the same core sectors including iron and steel. UK importers become liable once cumulative imports of covered goods exceed GBP 50,000 in value over a rolling 12-month period, with the first return covering all of 2027 due by 31 May 2028. Indian exporters should track this alongside the EU regime rather than treat it as a separate, later-stage risk.
- Early evidence from the CBAM reporting phase suggests the mechanism is acting selectively rather than as a blanket barrier: higher-emission Indian mills have seen EU export volumes and revenues decline, while lower-emission producers have broadly held their share -- underscoring that emissions-intensity reduction, not compliance paperwork alone, will determine competitiveness in this market.
- Policy-backed export push: Despite higher compliance burdens, India targets 25 mnt/year in steel exports by 2047, supported by trade facilitation and infrastructure upgrades.

BALANCING BLAST FURNACE COMPULSION AND GREEN STEEL OBLIGATION IS SHAPING INDIA'S STRATEGIC DECARBONIZATION JOURNEY

India's steel sector stands at a pivotal juncture poised to meet unprecedented domestic demand while competing in an increasingly carbon-conscious global market. The country's growth trajectory, anchored in the coal-based BF–BOF route, offers scale and raw material security but risks locking in high emissions and stranded assets without decisive transition measures. The path forward demands a dual focus: aggressively scaling low-carbon technologies such as scrap-based EAF, hydrogen DRI, and CCUS, while embedding energy efficiency, renewable integration, and circularity across existing operations.

Balancing competitiveness with decarbonization will require synchronised action policy reforms that incentivise green investment, industry-wide adoption of best available technologies, strategic global partnerships for technology transfer, and a robust domestic scrap ecosystem. By aligning its expansion plans with global green steel standards and emerging trade norms, India can not only secure its domestic growth ambitions but also position itself as a trusted supplier in premium, low-carbon steel markets. The choice is clear: accelerating decarbonization at scale is no longer a cost of doing business it is the competitive edge that will define India's steel leadership in the decades ahead.



04. Secure Raw Material Supply Chains - Iron Ore & Pellets for A Net-Zero-Ready Steel Cycle

India's ambition to scale up its crude steel production capacity to 300 mnt by 2030, as laid out in the National Steel Policy (NSP), signifies a monumental leap not just in output but also in raw material preparedness. The backbone of this transformation lies in securing a steady, scalable, and environmentally sustainable supply chain of the two foundational inputs that underpin it: iron ore and pellets.

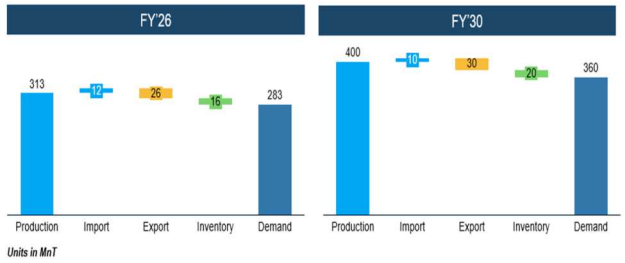
As crude steel production rises, iron ore and pellet demand will rise in tandem. Iron ore consumption is projected to rise roughly 40% from current levels to reach 360 mnt by FY30, up from 256 mnt in FY25, while pellet capacity is on a similar upward trajectory to support both blast-furnace and DRI-based routes. These projections underscore the strategic importance of securing high-quality iron ore and scaling pellet capacity as India's steel industry expands.

INDIA'S RAW MATERIAL REQUIREMENT FOR STEEL PRODUCTION

Raw material	FY'20	FY'21	FY'22	FY'23	FY'24	FY'25	FY'30 (P)
Crude Steel	109	104	120	127	144	152	215
Hot Metal	73	69	78	81	87	9	140
Iron Ore	187	176	200	212	235	256	360

IRON ORE: SECURING QUALITY IN THE FACE OF VOLUME SUFFICIENCY

India is among the world's largest producers and consumers of iron ore. Production reached 289 mnt in FY25 and rose further to an estimated 313 mnt in FY26, on track to grow to 400 mnt by FY30. This surge aligns with steel production growth from 169 mnt (FY26) to 215 mnt (Fy30), as per industry estimates. Consumption, too, will rise in tandem, from 255 mnt in FY25 to 283 mnt in FY26 and 360 mnt by FY30, by estimates.

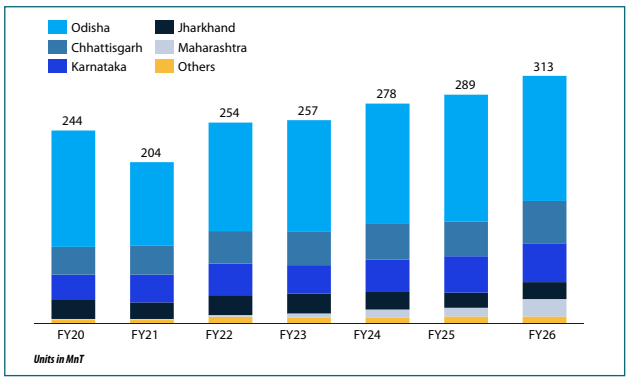


While India appears volume-sufficient, the core challenge now revolves around availability of high-grade ore (Fe ≥62%), which is gradually declining in share. This leads to higher reliance on beneficiation and pelletization to maintain productivity and ensure quality consistency across steel plants especially DRI-based ones, which require high-grade feedstock for efficient metallization.

REGIONAL PRODUCTION DYNAMICS AND STATE-WISE PERFORMANCE

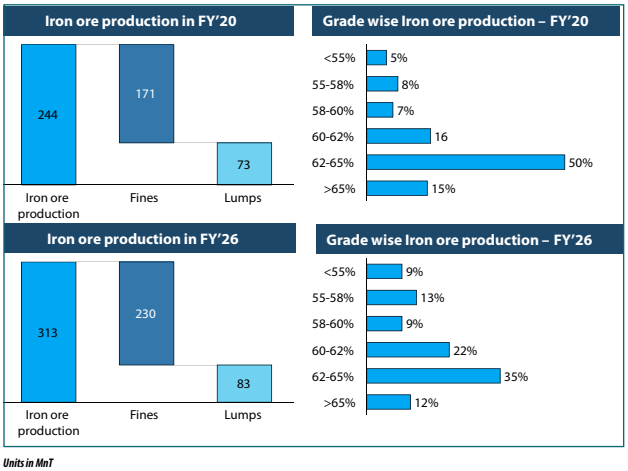
India's iron ore mining is concentrated in a few key states. Odisha remains the dominant producer at 158 mnt in FY26 (down slightly from 160 mnt in Fy25), followed by Chhattisgarh, which jumped to 53.5 mnt in FY26 (from 44 mnt in FY25), and Karnataka at 49 mnt. The resurgence of Maharashtra is especially notable production has surged from 1 mnt in FY20 to 11 mnt in FY25 and further doubled to 22 mnt in FY26, reflecting the successful operationalization of auctioned blocks.

Goa's iron ore mining sector officially resumed in 2025, signalling a major revival for the state and India's mining industry. By mid-2025, three blocks were operational and up to five had secured environmental clearance, with others in the preparatory stage. Leading players like Vedanta Sesa Goa have commenced extraction from Bicholim mine block.



DECLINING ORE GRADES: IMPLICATIONS FOR DRI AND QUALITY STEEL

India is witnessing a gradual depletion of high-grade ore deposits. Between FY20 and FY26, the share of Fe 62-65% ore in total production has fallen from roughly 50% to about 35%. Conversely, production of low-grade fines (Fe 55-58%) remains stable but underutilized due to the need for beneficiation.



This has a direct impact on DRI manufacturers, who depend on consistent, high-Fe ore to optimize metallization rates, energy efficiency, and final product quality. It also affects ESG targets, as low-grade ores generate more tailings, emissions, and energy consumption during processing.

BENEFICIATION AND VALUE ADDITION IMPERATIVE

To address grade challenges, beneficiation capacity is projected to rise from 143 mnt in FY25 to 170 mnt by FY30. This is vital for making sub-58% Fe ores usable in value-added applications. States like Odisha and Chhattisgarh are leading in beneficiation infrastructure, but logistical and environmental constraints slow its expansion in other regions.

PRICING REFORMS AND BENCHMARKING INITIATIVES

In a significant policy development, NMDC is currently testing a proposed index based pricing mechanism designed to anchor domestic iron ore prices to global benchmarks for greater transparency and market alignment. This initiative, launched on a trial basis in mid 2025, is driven by the need to mitigate exposure to global price volatility. Instead of the traditional method, NMDC plans to derive price data from urban stockyards and offer more frequent disclosure schedules, while decoupling from international indices in the interim.

Alongside NMDC's move, the Ministry of Mines has proposed that the Indian Bureau of Mines (IBM) benchmark the Average Sale Price (ASP) of iron ore against international indices such as S&P Global Platts. Under this proposal, IBM would compute daily ASPs for key grades (e.g. Fe 60-62% fines) in Indian rupees, replacing the self-declaration model currently in use. This approach aims to standardize pricing across states, curb royalty underreporting, and enhance alignment with global standards.

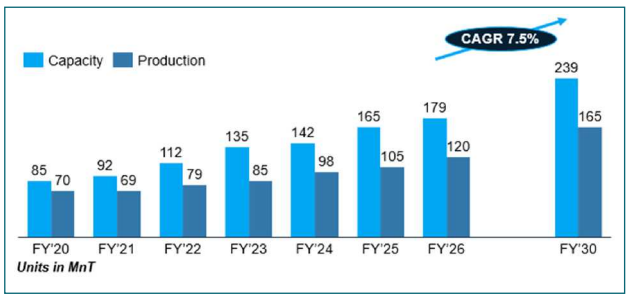
Together, these pricing reforms signify a major shift toward market-linked, transparent pricing in India's iron ore sector, with potential benefits including improved royalty revenues, reduced arbitrage, and stronger export positioning.

PELLETS: BRIDGING LOW-GRADE ORE AND CLEAN STEELMAKING

Pellets have evolved from being a supplementary feedstock to a critical raw material in India's decarbonization roadmap. Driven by increasing regulatory emphasis on environmental compliance and steelmakers' focus on productivity, pellets offer a superior input characterized by uniform particle size, high Fe content (typically >64%), and reduced gangue. This leads to notable improvements in energy efficiency and emission reduction, especially in blast furnace (BF) and direct reduction (DRI) processes.

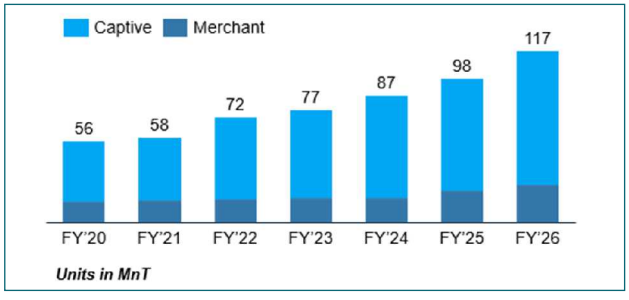
CAPACITY GROWTH AND PRODUCTION DYNAMICS

India's installed pellet production capacity rose to 178.8 mnt in FY'26 (from 165 mnt in FY25), with actual production climbing to 120 mnt, translating to an overall capacity utilization of about 67%, up from 64% a year earlier. Despite having sufficient nameplate capacity, under-utilization continues to persist due to logistical bottlenecks, market volatility, and export dependency.

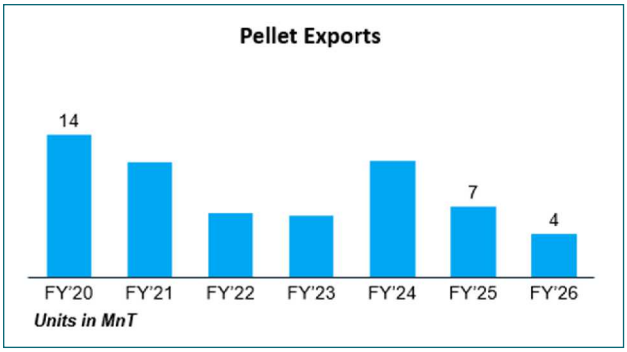


MERCHANT VS CAPTIVE: DEMAND STRUCTURE AND MARKET VOLATILITY

In FY26, total domestic pellet demand rose to 117 mnt (from 98 mnt in Fy25). On the supply side, merchant sales grew to 26.3 mnt, while captive consumption climbed further to 90.7 mnt, highlighting the continued shift toward vertical integration among steelmakers.



However, the merchant pellet market remains highly volatile, driven largely by export fluctuations especially to China. Export volumes have fluctuated between 4 mnt and 14 mnt over the last six years, falling further to just 4.2 mnt in FY26 (from 6.9 mnt in FY25), extending a multi-year downward trend. This volatility often translates to supply shortages and price spikes in the domestic market, disproportionately affecting smaller secondary steel producers.

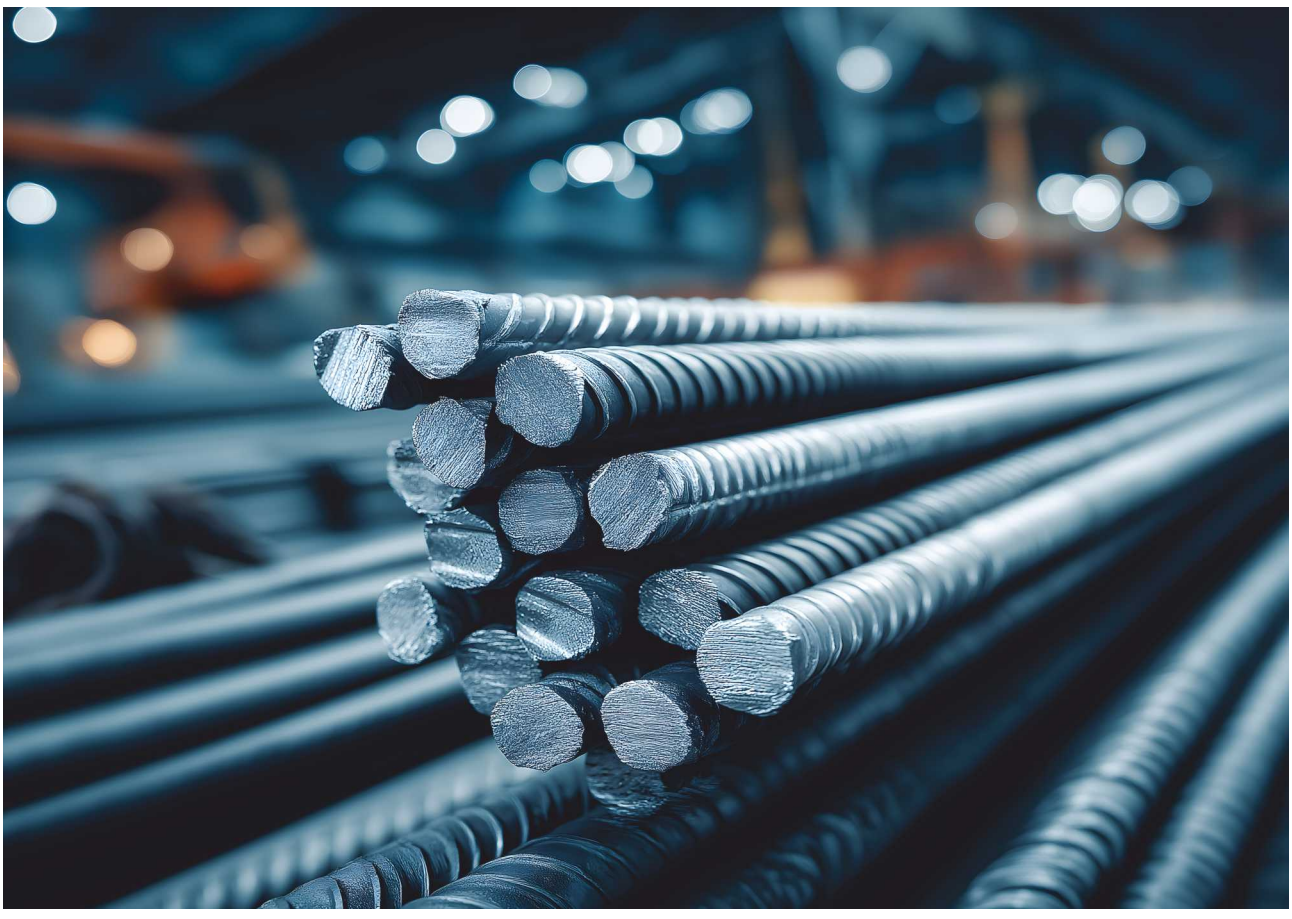


INDIA'S RAW MATERIAL STRATEGY SHIFT - STRENGTHENING THE PATH TO A NET ZERO STEEL FUTURE

India's steel sector is undergoing a decisive transformation in its iron ore and pellet strategy, aligning with its net zero ambitions. Historically reliant on domestic iron ore lumps and fines, the supply chain is steadily shifting towards greater pelletization and higher-grade, beneficiated ore to support both blast-furnace and DRI-based steelmaking routes.

- Pelletization Surge – The blast furnace charge mix is moving towards greater pellet utilisation, projected to reach ~38% by FY 2030, supported by over 200 MnT of planned pellet capacity. This structural shift is expected to deliver higher efficiency, consistent quality, and reduced carbon intensity, positioning the sector for a low-emission future.

India must continue to build a resilient, quality-focused iron ore and pellet supply chain one that balances volume sufficiency with grade improvement, beneficiation capacity, and transparent, market-linked pricing. This will be central to supporting both the country's blast-furnace scale-up and its growing DRI-based, lower-carbon steelmaking base.



05. Price Volatility and The Need For Hedging

Prices of steel and its primary raw material, iron ore, have been highly volatile. This translates not only into price volatility across the ferrous value chain, but also as a source of economy-wide price risk given the near universal use of steel across industries and sectors. Prudence, therefore, calls for managing this risk using financial instruments such as Exchange-Traded derivatives on steel or iron ore.

The 12 months to July 2026 offer a sharp illustration of how volatile India's raw-material-to-finished-steel chain has become. Odisha iron ore fines (Fe 62%) rallied from ~INR 5,100/t in Jul'25 to a peak of ~INR 5,900/t around Jan-Feb'26, then eased back to ~INR 4,900/t by Jul'26 - a roughly 17% peak-to-trough round trip within a year. Imported coking coal moved the other way, climbing from USD 190/t to USD 250-260/t over the same period and holding near those highs. Scrap, sponge iron, pig iron and billet all echoed the iron ore pattern - a sharp rally into Q4 FY26 (Dec'25-Apr'26) followed by a 10-20% correction into Jul'26. Finished long products felt this most acutely: BF-route rebar (Mumbai) swung from ~INR 47,000/t (Jul'25) to a peak of ~INR 60,250/t (Apr'26, +28%) before giving back almost the entire rally to ~INR 48,840/t by Jul'26. HRC was the outlier, holding near its cycle high (~INR 61,000/t) even as upstream costs cooled - pointing to a tighter HRC-specific demand-supply balance than the long-products complex.

A full rally-and-correction cycle compressed into under 12 months is now a recurring feature of this value chain, not an exception. That raises the cost of staying unhedged: producers who locked in raw material costs near the Q1 FY26 peak, and sold finished steel forward without a matching hedge, would have been squeezed from both sides as prices normalised through mid-2026.

EXCHANGE-TRADED PRICE DISCOVERY: DALIAN, SHFE, AND INDIA'S OWN EMERGING MARKET

- Dalian Commodity Exchange (DCE) - Iron Ore: The world's largest iron ore derivatives market by volume, trading in CNY/tonne (100-tonne lots); open interest has run close to 900,000-950,000 lots through early 2026. Alongside Singapore Exchange (SGX) dollar-denominated swaps, DCE settlement prices have become the de facto global reference that physical iron ore contracts are increasingly priced or benchmarked against - even though India has no domestic iron ore futures contract of its own.
- Shanghai Futures Exchange (SHFE) - Steel: SHFE lists actively traded rebar, wire rod and hot-rolled coil (HRC) futures, plus a rebar options market (since Dec 2022). In June 2026, SHFE and the London Metal Exchange (LME) jointly launched an HRC futures settlement-price licensing initiative - a notable step toward extending Chinese steel price discovery into international risk-management products.
- India's own market: MCX launched a Steel Rebar futures contract in January 2024 and continues to run active contract cycles (e.g., the April 2026 series). However, liquidity and open interest remain a fraction of DCE/SHFE volumes, and India

INDIAN STEEL & RAW MATERIAL PRICES (JUL'25 - JUL'26)

Particular	Currency	Jul'25	Aug'25	Sep'25	Oct'25	Nov'25	Dec'25	Jan'26	Feb'26	Mar'26	Apr'26	May'26	Jun'26	Jul'26(till 20)	m-o-m(%)
Raw Material															
Odisha Iron Ore Index-Fines, Fe 62%, Ex-mines	INR	5,100	5,470	5,400	5,300	5,480	5,710	5,900	5,900	5,810	5,720	5,350	4,990	4,900	-2%
Odisha Iron Ore Index-Lumps, 10-30, Fe 63%, Ex-mines	INR	6,590	7,070	7,120	6,910	6,980	7,340	7,350	7,320	7,150	7,060	6,800	6,450	6,250	-3%
Pellet Index, DAP Raipur	INR	9,450	10,210	10,270	10,160	9,770	9,500	9,770	10,450	10,870	10,610	9,820	9,280	9,390	1%
Odisha Iron ore Index-Fines, Fe 57%, Ex-mines	INR	3,260	3,670	3,670	3,560	3,670	3,840	3,990	4,060	3,910	3,790	3,620	3,400	3,300	-3%
Australia Iron Ore Fines, Fe 61%, CNF China	USD	100	100	100	100	100	110	110*	100	100	110	110	100	100	0%
India Iron Ore Fines, Fe 57%, FOB East Coast	USD	60	60	70	70	70	70	70	60	60	60	60	50	50	0%
Coking Coal, Premium HCC, CFR India	USD	190	200	200	210	210	230	250	260	250	250	260	260	250	-4%
Non-coking Coal, Domestic 5000 GCV, Exw-Bilaspur	INR	4,750	5,150	5,800	6,270	6,320	5,860	5,750	5,850	6,240	6,550	5,810	5,500	5,510	0%
Non-coking coal, RB3, CNF Gangavaram	USD	70	70	70	70	70	80	80	80	100	90	100	100	90	-10%
Scrap and Metallics															
Melting Scrap, HMS 80:20, DAP Mumbai	INR	30,640	31,220	31,140	30,060	29,930	30,600	32,050	33,290	34,130	35,640	34,800	33,290	31,520	-5%
Melting Scrap, Shredded (EU Origin), CFR Nhava Sheva	USD	360	360	360	350	350	350	360	370	380	400	400	390	380	-3%
Sponge Iron, PDRI, Exw-Raipur	INR	23,740	24,090	24,080	22,930	23,410	23,260	24,680	26,850	26,720	26,420	25,360	24,180	23,360	-3%
Sponge Iron, CDRI, Exw-Rourkela	INR	24,990	25,950	26,140	24,690	24,340	24,120	25,770	27,140	27,830	28,460	26,480	25,240	24,460	-3%
Pig Iron, Steel Grade, Exw-Durgapur	INR	32,460	32,580	32,490	31,640	32,200	32,710	37,250	38,260	37,920	40,240	38,350	37,860	37,700	0%
Steel															
Billet Index, Exw-Raipur	INR	37,010	37,430	36,790	35,170	35,550	37,170	40,500	40,920	41,600	42,470	40,150	38,820	37,990	-2%
Re-bar (Fe 500D) BF route, Exy-Mumbai	INR	48,750	48,080	47,070	47,060	47,000	47,750	54,480	58,650	59,750	60,250	57,790	52,540	48,840	-7%
Re-bar (Fe 500), Exw-Mumbai	INR	43,550	45,420	44,140	42,230	42,710	44,960	49,440	49,730	51,030	52,160	47,680	45,580	43,340	-5%
Wire Rod, Exw-Durgapur	INR	40,770	40,410	39,190	37,880	38,370	40,260	43,650	44,650	45,340	46,860	43,220	41,280	41,310	0%
HRC, Exy-Mumbai	INR	49,420	49,890	49,140	49,380	48,250	48,600	53,490	55,250	58,100	60,560	59,950	61,270	61,000	0%
Ferro Alloys															
SiMn 60-14, Exw-Raipur	INR	72,910	70,990	69,500	71,200	71,290	69,550	71,870	73,850	74,890	83,870	75,760	76,320	75,620	-1%
Source: BigMint															

*Source: BigMint. *Jul'26 data till the 20th.*

still has no exchange-traded iron ore, coking coal, or HRC contract - leaving most of the domestic value chain, including every item in the table above, priced off OTC/index benchmarks (e.g., BigMint) rather than a liquid, exchange-cleared hedge.

For Indian steelmakers, the combination of high intra-year price volatility (as seen over the last 12 months) and thin domestic hedging infrastructure is a structural risk rather than a passing inconvenience. Deepening MCX's steel and raw-material contract suite - rebar is a start; iron ore, coking coal and HRC contracts would close the gap - and encouraging wider participation in DCE/SGX iron ore derivatives for import-linked exposure are both worth active consideration as India scales toward its FY30 capacity targets.

REPORT ABBREVIATIONS

ABBREVIATION	DEFINITION
AI	Artificial Intelligence
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
ASP	Average Sale Price
BATs	Best Available Technologies
BF	Blast Furnace
BIS	Bureau of Indian Standards
CAMU	China Association of Scrap Metal Utilization
CAGR	Compound Annual Growth Rate
CBAM	Carbon Border Adjustment Mechanism
CCUS	Carbon Capture, Utilisation, and Storage
CO_2	Carbon Dioxide
Cr	Crore (Indian numbering system, 1 crore = 10 million)
CY	Calendar Year
DRI	Direct Reduced Iron
EAF	Electric Arc Furnace
EPC	Engineering, Procurement, and Construction
ESG	Environmental, Social, and Governance
EV	Electric Vehicle
FY	Financial Year
GCC	Gulf Cooperation Council
Gcal	Giga Calories
GT	Giga tonnes
IF	Induction Furnace
INR	Indian Rupee
IBM	Indian Bureau of Mines
ITA	International Trade Administration
KINFRA	Kerala Industrial Infrastructure Development Corporation
LNG	Liquefied Natural Gas
Mnt	Million Tonnes
Mtoe	Million Tonnes of Oil Equivalent
MTHL	Mumbai Trans Harbour Link

ABBREVIATION	DEFINITION
MSME	Micro, Small and Medium Enterprises
mnt/year	Million Tonnes Per Annum
NIP	National Infrastructure Pipeline
NMDC	National Mineral Development Corporation
NHDP	National Highways Development Project
OEM	Original Equipment Manufacturer
PAT	Perform, Achieve and Trade
PCI	Pulverized Coal Injection
PLI	Production Linked Incentive
QCO	Quality Control Order
RE	Renewable Energy
RPO	Renewable Purchase Obligation
RRTS	Regional Rapid Transit System
SKU	Stock Keeping Unit
SSIs	Small Scale Industries
tCO_2	Tonnes of Carbon Dioxide
Tcs	Tonnes of Crude Steel
TOD	Transit Oriented Development
USD	United States Dollar
WSA	World Steel Association

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NOTES

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