

INDUSTRY OUTLOOK REPORT | ALTIVUS CONSULTING

# The Metals Industry in India

*Scale, structure, and strategy in the world's second largest steel and aluminium producer*

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Industry | Metals and Mining | Strategy | Economics

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Prepared by

**Krish Gupta • Kanav Bajaj • Vidit Garg**  
**Altivus Consulting**

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## Executive Summary

India's metals industry has become one of the most strategically important pillars of the country's industrial economy. India is now the world's second largest crude steel producer and second largest aluminium producer, alongside being the fourth largest iron ore producer and a meaningful global supplier of zinc and refined copper. Crude steel production reached approximately 168.4 million tonnes in FY26, up 10.7 percent year on year, against an installed capacity of around 220 million tonnes per annum, with the government targeting 300 million tonnes of capacity by FY31 and 500 million tonnes by 2047.

The industry's growth is being driven by a structurally different demand base than the one that powered China's steel boom. Where China's expansion was overwhelmingly property driven, India's steel and metals demand is being shaped by infrastructure spending, manufacturing expansion, automotive growth, and renewable energy buildout, a more diversified base that analysts view as more durable, if also slower to scale to China like volumes. India's per capita finished steel consumption stood at just 108 kilograms in FY25, against China's 601 kilograms, underscoring the scale of headroom that remains as the country urbanizes and industrializes further.

Financially, FY26 was a strong year for India's major listed metals producers. Tata Steel reported consolidated EBITDA of Rs 34,848 crore, up 35 percent year on year, while JSW Steel and Steel Authority of India both posted double digit growth in operating profit and improved margins. Government policy, including the specialty steel production linked incentive scheme, safeguard duties on select steel imports, and a National Critical Mineral Mission aimed at securing supply chains for battery and renewable energy linked minerals, continues to actively shape the competitive landscape, alongside roughly 9.01 lakh crore rupees, or about 100 billion dollars, in investment the sector is expected to attract to reach its 2030 capacity targets.

This report sets out the structure and scale of India's metals industry across its ferrous and non ferrous segments, profiles the major public and private sector players competing within it, examines the regulatory and trade policy environment shaping its trajectory, and assesses the financial performance, key risks, and outlook for the industry through 2030 and beyond.

### *Key figures at a glance*

Key figure	Value
India's global ranking in crude steel production	<b>2nd largest</b>
India's global ranking in primary aluminium production	<b>2nd largest</b>
Crude steel production, FY26	<b>about 168.4 million tonnes</b>
Installed steelmaking capacity, FY26	<b>about 220 million tonnes</b>

Government capacity target by FY31	<b>300 million tonnes</b>
Per capita finished steel consumption, FY25	<b>108 kilograms</b>
Estimated value of mineral production, FY26	<b>about Rs 1,71,460 crore</b>
Investment required to reach 2030 capacity targets	<b>about Rs 9.01 lakh crore (USD 100 billion)</b>

Source: World Steel Association, Ministry of Steel, Ministry of Mines, IBEF, Joint Plant Committee

# 1. Market Definition and Scope

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For the purposes of this report, the metals industry in India is defined as the set of upstream and downstream activities involved in the extraction, processing, smelting, refining, and primary fabrication of ferrous and non ferrous metals, together with the mining and mineral processing activities that feed them. The ferrous segment covers iron ore mining and the production of pig iron, sponge iron, crude steel, and finished steel products, the single largest component of the industry by both volume and value. The non ferrous segment covers primary aluminium, copper, zinc, and lead, along with associated byproducts such as silver, which has become an increasingly significant earnings contributor for India's zinc producers.

This report focuses primarily on the production, consumption, competitive structure, and financial performance of this industry within India, while situating Indian developments within the relevant global context, particularly China, whose production and trade policy decisions materially affect global metals prices and Indian producers' competitiveness. Downstream metal fabrication, such as automotive components or consumer appliances, and the broader mining sector covering fuel minerals such as coal, are referenced where relevant to demand or policy context but are not the primary focus of this analysis.

## 2. Industry Overview

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India's metals industry sits on an unusually strong natural resource base. The country holds substantial reserves of iron ore, bauxite, chromite, and manganese, and is largely self sufficient in the metallic minerals that feed its steel and aluminium industries, even as it remains structurally dependent on imports for metallurgical coking coal, a key input for blast furnace steelmaking that has no significant domestic substitute. India is the world's fourth largest iron ore producer, with production reaching a record 289 million tonnes in FY25, up 4 percent from 277 million tonnes the year before, and the second largest producer of both aluminium and coal globally.

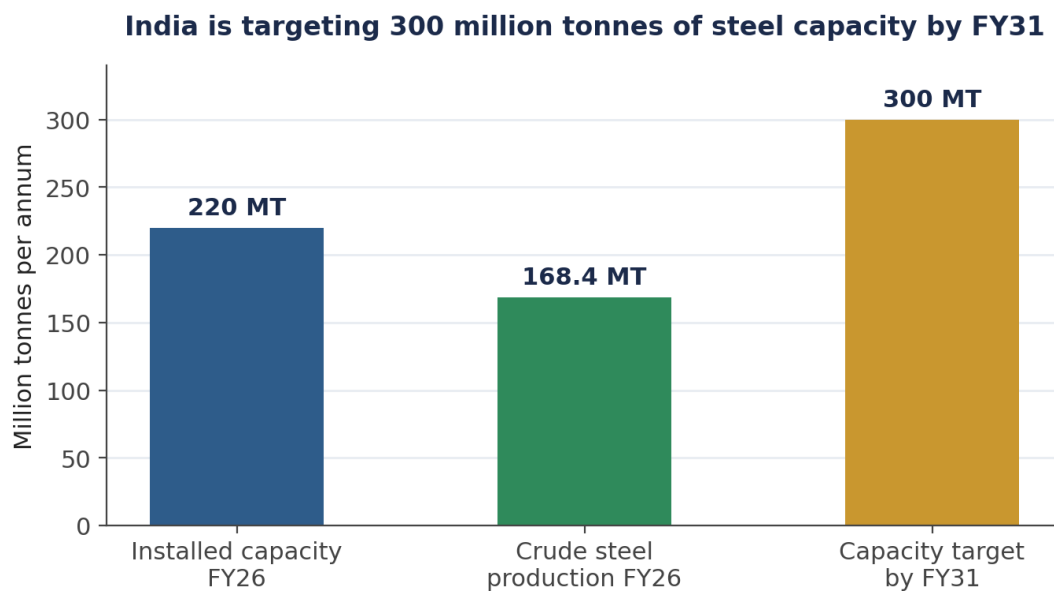
### Industry Structure: A Mix of Private Majors and Public Sector Anchors

The industry's structure reflects India's broader economic history, combining large, vertically integrated private conglomerates with long standing public sector enterprises that continue to play a strategically important role. In steel, Tata Steel and JSW Steel lead the private sector, alongside ArcelorMittal Nippon Steel India, a joint venture between the world's largest steelmaker and Japan's Nippon Steel, while Steel Authority of India Limited, known as SAIL, and Rashtriya Ispat Nigam Limited represent the public sector, alongside NMDC, India's largest iron ore miner. In non ferrous metals, Hindalco Industries, part of the Aditya Birla Group and parent of the global aluminium and recycling leader Novelis, and Vedanta Limited, which holds Hindustan Zinc as a subsidiary alongside its own aluminium operations, lead the private sector, while National Aluminium Company, known as NALCO, and Hindustan Copper Limited anchor the public sector presence.

Vertical integration has become an increasingly important competitive differentiator across the industry. Leading steel producers have pushed to secure captive iron ore and coking coal assets, both domestically and overseas, to reduce exposure to volatile global input prices, while aluminium producers have similarly invested in captive bauxite mines and power generation to control the energy intensive smelting process. This integration strategy has shifted from being primarily a cost efficiency measure to also serving as a hedge against supply chain disruption and geopolitical risk, a theme that has gained urgency as global trade tensions and tariff measures have intensified since 2025.

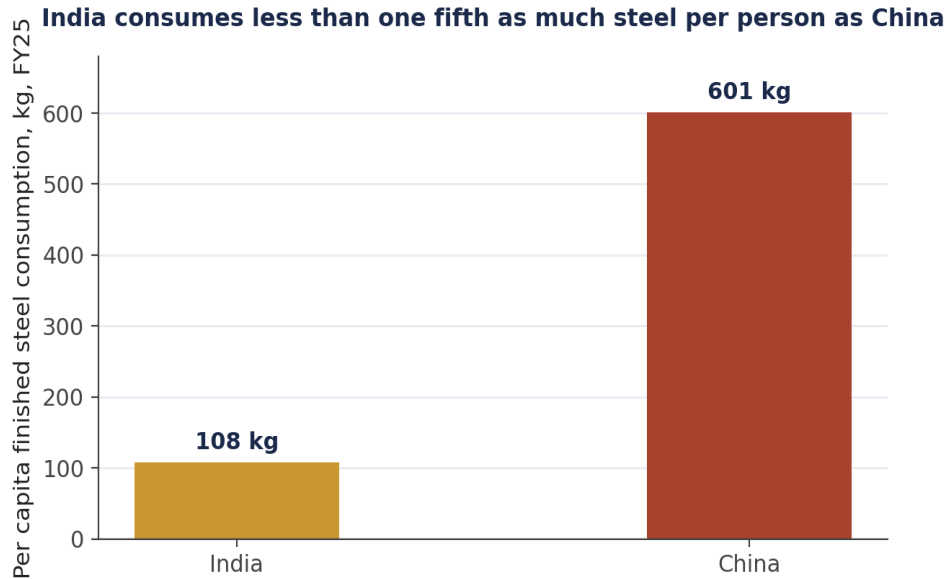
### 3. Market Size and Analysis

India's crude steel production reached approximately 168.4 million tonnes in FY26, up 10.7 percent year on year, while finished steel consumption grew about 7 percent to 164 million tonnes over the same period. Installed steelmaking capacity stood at roughly 220 million tonnes per annum as of FY26, against the government's National Steel Policy target of 300 million tonnes per annum by FY31, implying the industry needs to add close to 80 million tonnes of fresh capacity within the next five years to stay on track. A longer range ambition, articulated more recently by the Ministry of Steel, targets 500 million tonnes of annual capacity by 2047, India's hundredth year of independence.



Source: Ministry of Steel, Joint Plant Committee, World Steel Association

The scale of remaining headroom in domestic demand is best illustrated by per capita consumption. India consumed just 108 kilograms of finished steel per person in FY25, less than one fifth of China's 601 kilograms and well below the global average, a gap that reflects India's earlier stage of urbanization and infrastructure build out relative to China at a comparable stage of its own development. Closing even a fraction of that gap as Indian incomes rise and infrastructure investment continues represents the single largest medium term demand driver for the industry.



Source: World Steel Association; Ministry of Steel per capita consumption data, FY25

### Trade Dynamics: A Net Exporter Again, but Under Renewed Pressure

India's trade position in finished steel has been volatile. Exports surged nearly 36 percent in FY26, helped by a 12 percent safeguard duty on select steel imports introduced to counter a surge of low priced Chinese steel, allowing India to regain its position as a net steel exporter after two years of net imports. More recent monthly data complicates that picture: in May 2026 alone, finished steel imports rose 62.5 percent year on year to 0.69 million tonnes against exports of 0.51 million tonnes, as fast rising domestic consumption growth has, in some months, outpaced the rate at which new domestic capacity is coming online. This tension, between a structurally growing domestic market and capacity additions that take years to materialize, is likely to keep India's trade balance in finished steel volatile over the next several years even as the underlying capacity build out continues.

Pricing has moved in the opposite direction of volumes for much of the past year. The spot price of a benchmark hot rolled coil steel product fell from a 2025 high of around Rs 52,750 per tonne in May to roughly Rs 42,800 per tonne by late December 2025, a decline of nearly 19 percent, reflecting a global steel market grappling with overcapacity, with global steelmaking capacity reaching an estimated 2.55 billion tonnes by the end of 2025, its fastest rate of expansion since 2009. For Indian producers, this combination of strong volume growth alongside softer pricing has been a defining tension of the FY26 operating environment, discussed further in the financial performance chapter of this report.

## 4. Competitive Landscape

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India's steel industry is led by a small group of large integrated producers operating alongside a long tail of smaller secondary and re rolling mills. Tata Steel and JSW Steel are the two largest private sector producers by both capacity and revenue, each pursuing aggressive brownfield and greenfield expansion. Tata Steel has outlined plans for a further 7 to 7.5 million tonnes of capacity addition across its Indian operations, with projects underway at Kalinganagar, Neelachal, Meramandali, Ludhiana, and Gamharia, while ArcelorMittal Nippon Steel India has secured 890 hectares of land in Andhra Pradesh for a new integrated steel mill with planned capacity of about 7 million tonnes per annum, extending its footprint beyond its existing Hazira operations.

On the public sector side, SAIL remains a critical supplier to India's infrastructure, railway, and defense sectors and has approved an expansion of its Bhilai Steel Plant from 6.8 to 10.2 million tonnes of crude steel capacity, while NMDC continues to anchor India's iron ore supply chain as the country's largest producer of the raw material. The competitive dynamic between these public sector anchors and the larger, faster growing private conglomerates has shifted meaningfully over the past decade, with private players now accounting for the clear majority of new capacity additions, even as public sector enterprises retain strategic importance in defense linked and remote region supply.

### Non Ferrous Metals: A More Concentrated Field

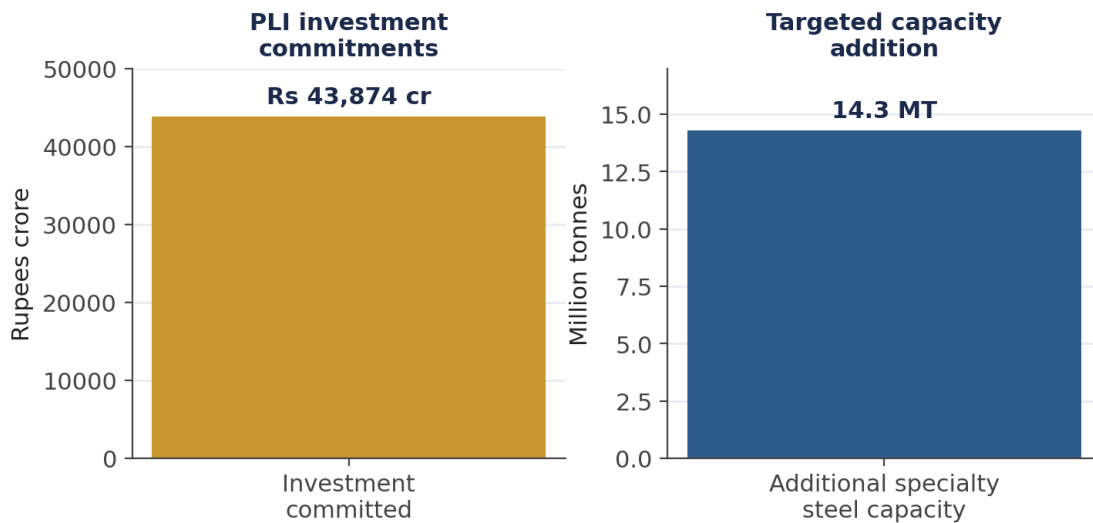
The non ferrous segment is more concentrated than steel. In aluminium, three companies, Hindalco, Vedanta, and NALCO, account for the substantial majority of domestic primary production. Hindalco operates smelters with a combined primary aluminium capacity of 1.3 million tonnes annually and, through its global subsidiary Novelis, leads the world's aluminium rolling and recycling industry, giving it a more diversified, less commodity price sensitive earnings profile than its domestic peers. Vedanta operates a combined 2.4 million tonnes per annum of smelting capacity across its Jharsuguda and BALCO facilities and additionally controls Hindustan Zinc, India's dominant zinc and silver producer, while NALCO remains the most direct, undiversified play on primary aluminium pricing among the three. In copper, Hindalco and the formerly larger Sterlite Industries smelting operations, alongside the public sector's Hindustan Copper Limited, make up a market structurally constrained by India's very limited domestic copper ore reserves, just 0.31 percent of global reserves, forcing heavy reliance on imported concentrate even as Hindustan Copper pursues an ambitious plan to expand its own mining capacity from 4 million to as much as 20.2 million tonnes of ore per annum over two development phases.

## 5. Regulatory and Policy Landscape

Government policy has played an unusually active role in shaping India's metals industry, spanning capacity planning, trade protection, and increasingly, supply chain security for the critical minerals needed by clean energy and electronics industries. The National Steel Policy, most recently updated in 2017 and reinforced by subsequent capacity targets, sets the headline ambition of 300 million tonnes of steelmaking capacity by FY31, while the 2021 amendment to the Mines and Minerals Development and Regulation Act allowed captive mine owners to sell up to half of their production on the open market, improving liquidity in domestic raw material supply.

The production linked incentive scheme for specialty steel has emerged as one of the more consequential recent interventions, aimed at reducing India's reliance on imported high value steel grades used in defense, automotive, and renewable energy applications. As of the most recent disclosures, the scheme has attracted cumulative investment commitments of approximately Rs 43,874 crore, expected to add about 14.3 million tonnes of new specialty steel capacity, with a third tranche of the scheme signing a further Rs 11,887 crore in memoranda of understanding with 55 companies, targeting an additional 26 million tonnes of specialty steel capacity by FY31.

### The specialty steel PLI scheme is mobilizing significant new capacity



Source: Ministry of Steel, Press Information Bureau, IBEF

### Trade Protection and Critical Mineral Security

On trade policy, the 12 percent safeguard duty introduced on select steel imports has been the most consequential recent measure, intended to shield domestic producers from a surge of low cost Chinese steel amid global oversupply. The Union Budget for FY27 is expected to extend this protective posture, with industry expectations of a new policy framework to reduce import reliance

on silver, copper, and zinc, potential safeguard duties on copper cathode, rod, wire, and tube imports, and possible adjustments to customs duty on aluminium and coking coal aimed at improving the cost competitiveness and pricing power of domestic producers.

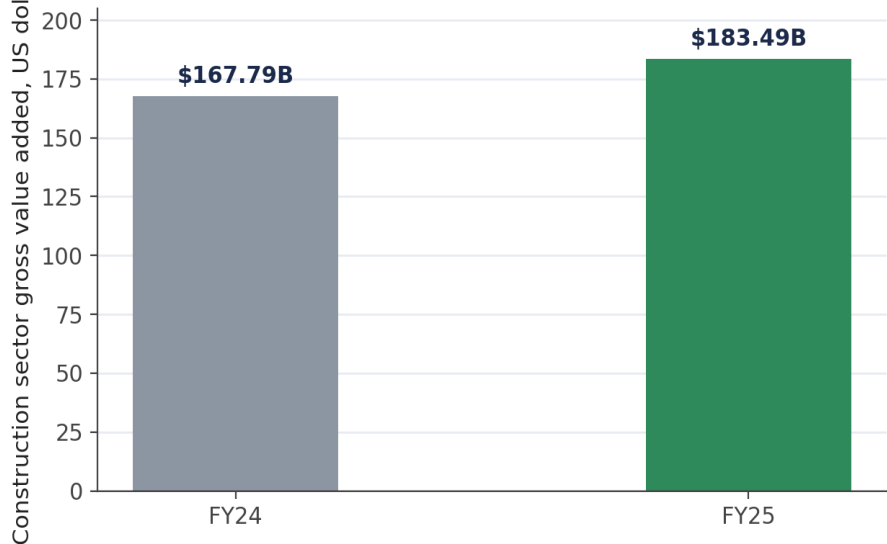
Beyond traditional trade and capacity policy, the government launched the seven year National Critical Mineral Mission in January 2025, with a proposed outlay of Rs 16,300 crore and an expected further Rs 18,000 crore of investment from public sector undertakings and other stakeholders, aimed at securing supply chains for lithium, cobalt, and other minerals critical to battery and renewable energy manufacturing. State owned companies including NALCO, Hindustan Copper, and Mineral Exploration Corporation have formed joint ventures to acquire overseas mineral assets, while India has signed cooperation agreements with Argentina, Kazakhstan, and Chile covering lithium, titanium, and broader critical mineral and clean energy partnerships, reflecting a recognition that the metals industry's next growth phase will depend as much on securing new mineral inputs as on expanding existing steel and aluminium capacity.

## 6. Key Trends and Growth Drivers

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- **Infrastructure led demand:** continued government spending on roads, railways, ports, and airports remains the single largest structural driver of steel demand, with the construction sector's gross value added rising from about 167.8 billion dollars in FY24 to about 183.5 billion dollars in FY25, directly underpinning steel and cement consumption growth.
- **Automotive and EV transition:** rising vehicle production and a gradual shift toward electric vehicles is increasing demand for both steel and lightweight aluminium components, with aluminium's role in EV battery enclosures and body frames expanding faster than its role in traditional internal combustion vehicles.
- **Renewable energy build out:** India's large scale solar, wind, and transmission infrastructure expansion, detailed in Altivus's earlier report on India's renewable energy transition, is a significant and growing source of demand for steel, aluminium, and copper, the last of which is particularly critical for transmission cabling and electrical applications.
- **Green steel and decarbonization:** the government has set a target to reduce carbon emissions from steel production to approximately 2 tonnes of CO<sub>2</sub> per tonne of finished steel by the mid 2030s, down from roughly 2.65 tonnes currently, with green steel demand forecast to rise from negligible levels today to about 4.49 million tonnes by FY30, driven by construction, infrastructure, and export market requirements including the European Union's carbon border adjustment mechanism.
- **Specialty and value added products:** producers are increasingly shifting product mix toward higher margin specialty and value added steel and aluminium products, supported directly by the production linked incentive scheme, as a strategy to differentiate from commodity grade output exposed to volatile global pricing.
- **Capacity expansion financed by strong balance sheets:** with FY26 marking a strong year of profit growth for the sector's largest players, producers are well positioned to fund the substantial capital expenditure required to reach 2030 capacity targets, including Hindalco's recently announced 2.3 billion dollar aluminium smelter expansion in Odisha.

### Construction sector growth remains the single largest demand driver

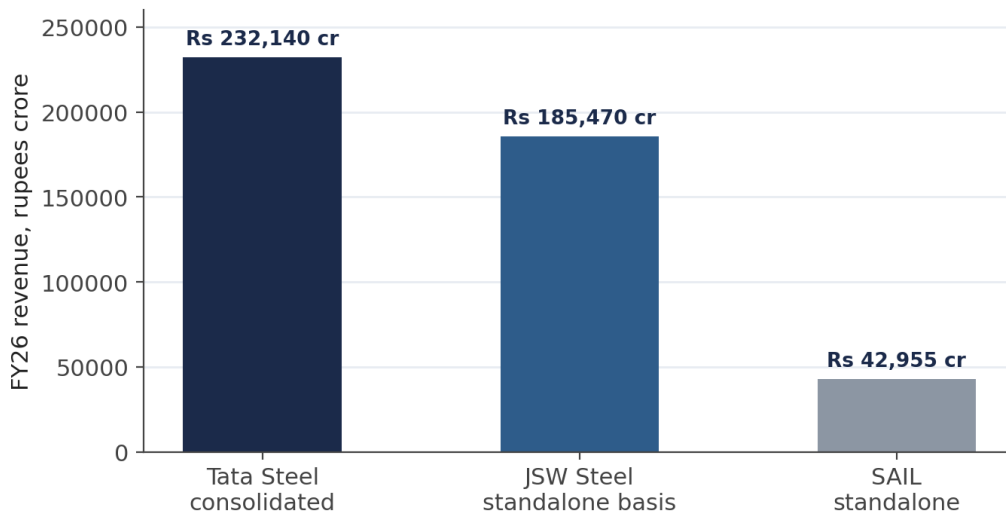


Source: India Brand Equity Foundation, national accounts data

## 7. Financial Performance

FY26 was a strong financial year for India's largest listed steel producers, even as global steel prices softened. Tata Steel reported consolidated revenue of Rs 2,32,140 crore, up 6.2 percent year on year, with EBITDA climbing 35 percent to Rs 34,848 crore and net profit more than tripling to roughly Rs 10,886 crore, aided by improved volumes, a better product mix in India, and around Rs 10,868 crore of savings delivered through the company's ongoing cost transformation program. The company's India operations alone delivered an EBITDA margin of 24 percent for the year, while its European operations, particularly in the United Kingdom, continued to face a more difficult demand and regulatory environment.

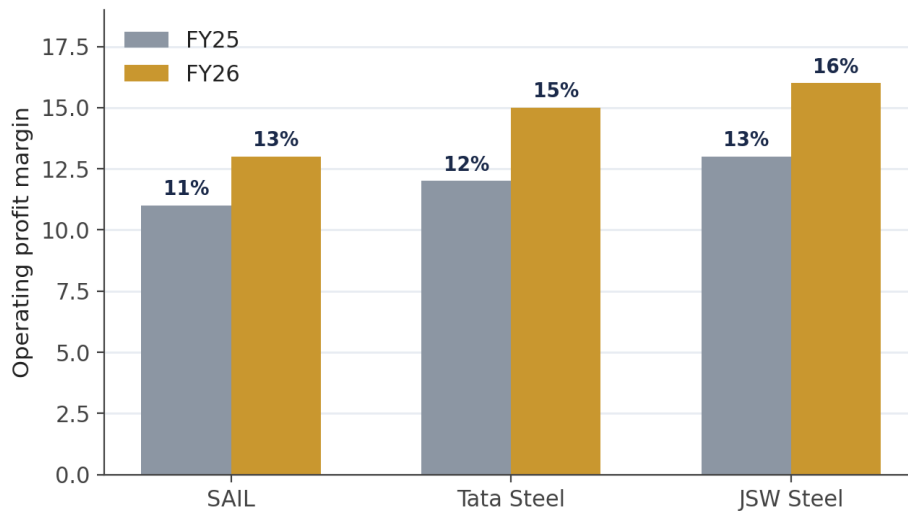
**Tata Steel and JSW Steel lead India's listed steel producers by revenue**



Source: Company filings; Tata Steel, JSW Steel, and SAIL FY26 results, May 2026

JSW Steel posted revenue of Rs 1,85,470 crore, up 10 percent year on year, with operating profit rising 29 percent and operating margin improving to 16 percent from 13 percent in FY25. Reported net profit surged to Rs 25,508 crore, though this figure was significantly boosted by approximately Rs 18,607 crore of exceptional items and other income, meaning the underlying operating performance, while genuinely improved, was considerably less dramatic than the headline net profit figure suggests. SAIL, the largest public sector producer, reported standalone revenue of Rs 42,955 crore, up 9.2 percent, with operating margin improving to 13 percent from 11 percent and net profit rising 27 percent to Rs 3,185 crore.

**Operating margins improved across all three producers in FY26**



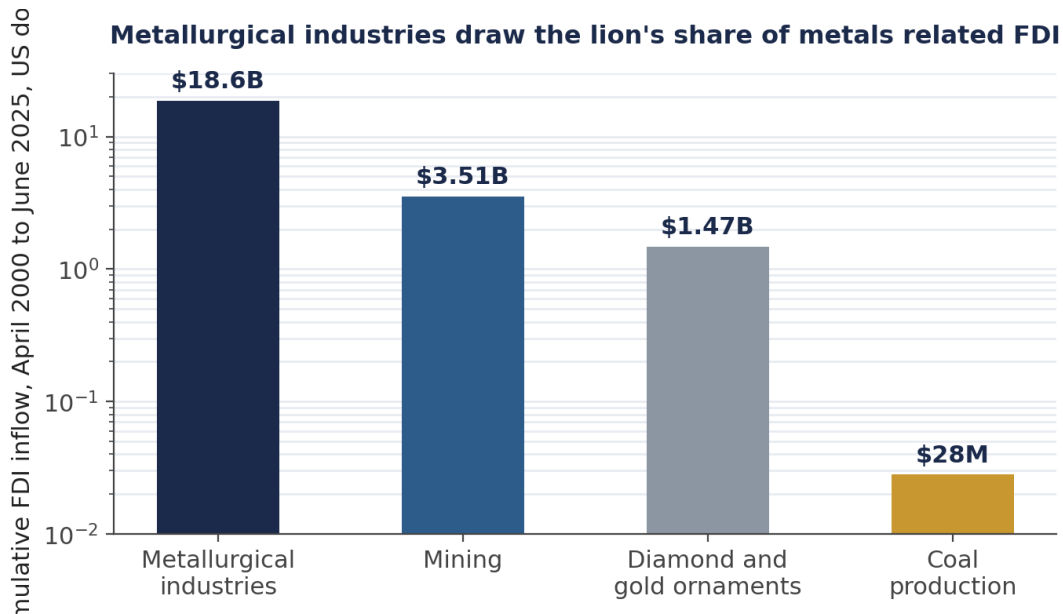
Source: Company filings, FY26 annual results

**A Common Theme: Margin Recovery Despite Soft Pricing**

Across all three companies, the defining financial story of FY26 was margin recovery achieved despite a soft pricing environment, driven primarily by volume growth, improved product mix, and aggressive cost reduction programs rather than by favorable steel prices, which in fact declined through much of the year. This pattern, margin expansion through operational efficiency rather than pricing tailwinds, suggests India's leading steel producers have built genuine structural cost advantages over the past several years, a more durable source of profitability than one dependent on commodity price cycles alone. Hindalco, India's largest aluminium and copper producer, also reported a strong FY26 driven by India business momentum alongside steady progress at its global Novelis subsidiary, continuing a multi year trend of resilient performance in the non ferrous segment supported by firm global aluminium and copper prices.

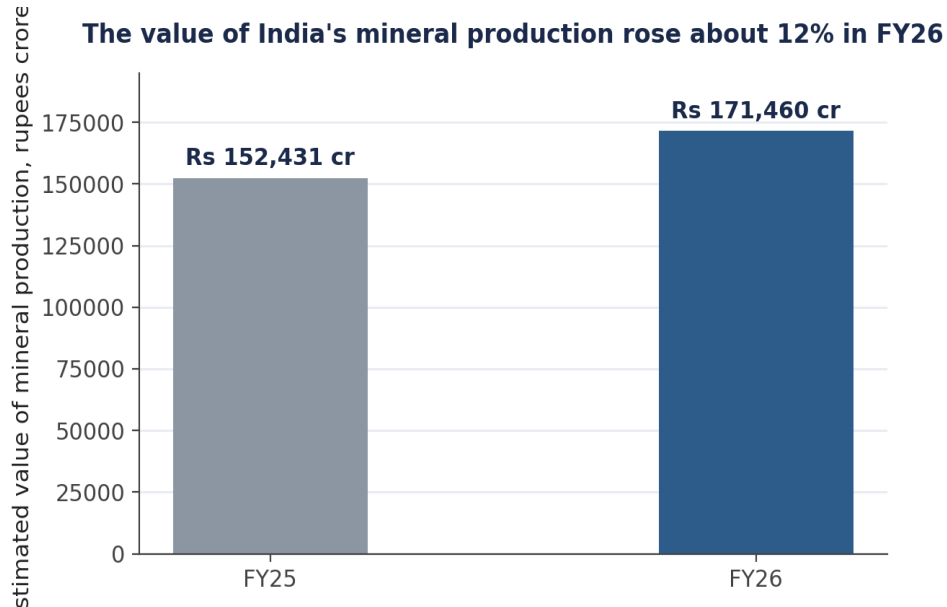
## 8. Investment and Capital Flows

Capital continues to flow into India's metals industry at scale, both from foreign and domestic sources. Foreign direct investment into the metallurgical industry totaled approximately 18.6 billion dollars between April 2000 and June 2025, by far the largest single FDI destination within the broader metals and mining ecosystem, well ahead of mining itself at roughly 3.51 billion dollars and diamond and gold ornaments at about 1.47 billion dollars over the same period.



Source: Department for Promotion of Industry and Internal Trade; IBEF

The value of India's domestic mineral production has also grown meaningfully, with the estimated value of mineral production rising to approximately Rs 1,71,460 crore in FY26, up from roughly Rs 1,52,431 crore in FY25, an increase of about 12 percent, reflecting both higher production volumes and firmer commodity prices across the year.



Source: Indian Bureau of Mines; IBEF

Looking ahead, the scale of capital required to meet the industry's stated capacity ambitions is substantial. Achieving the National Steel Policy's 300 million tonne capacity target by FY31 alone is expected to require roughly Rs 9.01 lakh crore, or about 100 billion dollars, of investment, while individual project announcements continue to accumulate: Hindalco's 2.3 billion dollar aluminium smelter expansion in Odisha, Tata Steel's planned 7 to 7.5 million tonnes of additional Indian capacity, and ArcelorMittal Nippon Steel India's new Andhra Pradesh mill among the most significant recent commitments. Adjacent sectors are scaling alongside the core industry as well, with India's mining and construction equipment sector projected to grow at roughly 19 percent annually, adding an estimated 99 billion dollars to the economy and 20 million jobs by 2030.

## 9. Key Risks and Challenges

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- **Raw material import dependence:** India's steel industry remains heavily reliant on imported metallurgical coking coal, with international prices rising to around 239 dollars per tonne in May 2026, a structural vulnerability that China did not face at a comparable stage of its own industrial development and one that directly exposes Indian producers' margins to global supply disruptions.
- **Global oversupply and pricing pressure:** global steelmaking capacity is expanding at its fastest pace since 2009, reaching an estimated 2.55 billion tonnes by the end of 2025, intensifying price competition and prompting a wave of antidumping and safeguard measures worldwide that could affect India's export ambitions even as it tries to protect its domestic market.
- **Trade policy volatility:** the gap between India's full year net exporter status and a renewed surge in monthly finished steel imports illustrates how quickly the country's trade balance in steel can swing, leaving producers exposed to both import competition when domestic capacity lags demand and to retaliatory trade measures abroad when exports rise.
- **Capital intensity and execution risk:** the roughly 100 billion dollar investment required to hit 2030 capacity targets must be deployed across complex, multi year greenfield and brownfield projects, all of which carry meaningful execution, financing, and regulatory approval risk, particularly for land intensive new integrated steel mills.
- **Carbon transition costs:** meeting the government's target of reducing emissions intensity from approximately 2.65 to about 2 tonnes of CO<sub>2</sub> per tonne of steel by the mid 2030s will require significant capital investment in cleaner production technology, and producers that move too slowly risk losing access to export markets subject to mechanisms like the European Union's carbon border adjustment.
- **Commodity price cyclical:** both ferrous and non ferrous metals remain fundamentally cyclical commodities whose prices are shaped by global demand conditions, particularly in China, leaving even India's best positioned, lowest cost producers exposed to periods of margin compression outside their direct control.

## 10. Future Outlook, 2026 to 2030 and Beyond

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### Base Case: Capacity Catches Up With Demand

In the most likely path, India's steel and broader metals capacity additions accelerate through the remainder of the decade, supported by strong producer balance sheets, continued infrastructure spending, and the specialty steel and critical minerals policy initiatives outlined in this report. Crude steel capacity approaches, though may not fully reach, the 300 million tonne target by FY31, with finished steel consumption continuing to grow at a high single digit pace as per capita consumption gradually closes part of the gap with global peers. Non ferrous metals demand, particularly copper and aluminium, grows at an even faster relative pace given their direct linkage to renewable energy and electric vehicle adoption.

### Upside Case: India Becomes a Structural Net Exporter

A more optimistic path sees India successfully resolve its raw material import dependencies, particularly in coking coal and copper concentrate, through the kind of overseas asset acquisitions and domestic mining expansion discussed in this report, while specialty steel capacity scales fast enough to meaningfully reduce high value steel imports. Under this scenario, India moves from an inconsistent, volatile net exporter to a more structurally consistent one, exporting both higher volumes and a richer, higher margin product mix, supported by continued cost leadership and growing global recognition of Indian steel and aluminium quality.

### Downside Case: Global Oversupply Pressures Margins

A less favorable path involves continued global steelmaking overcapacity, led by China, depressing prices for an extended period even as Indian volumes grow, compressing margins across the industry despite genuine operational improvements. Under this path, capacity expansion plans slow as producers become more cautious about committing capital into a weak pricing environment, pushing India's 2030 and 2047 capacity targets further out and leaving the country more reliant on safeguard duties and trade protection measures to defend domestic producers from import competition.

## Conclusion

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India's metals industry occupies a position few other large economies' equivalent sectors do: a genuinely massive existing production base, ranking second globally in both steel and aluminium, combined with a demand profile that remains, on a per capita basis, still early in its growth curve. That combination, scale already achieved alongside scale still to come, is what makes the industry distinct from China's more mature, plateauing metals sector and from smaller emerging producers that lack India's existing manufacturing base.

The path from here depends on execution across several fronts simultaneously: financing and building close to 80 million tonnes of new steel capacity within five years, reducing structural dependence on imported coking coal and copper concentrate, scaling specialty and green steel production fast enough to move up the value chain rather than simply adding commodity tonnage, and managing a global pricing environment shaped increasingly by Chinese overcapacity and rising trade protectionism. The financial performance delivered by India's leading producers in FY26, margin expansion achieved through operational discipline rather than favorable pricing, suggests the industry's core players are entering this next phase from a position of genuine strength, even if the path to 300 million tonnes and beyond will not be without volatility along the way.

## Appendix A: Data Tables

### Table A1: India Steel Industry Snapshot, FY26

Metric	Value
Crude steel production	about 168.4 million tonnes, up 10.7 percent year on year
Finished steel consumption	about 164 million tonnes, up about 7 percent year on year
Installed steelmaking capacity	about 220 million tonnes per annum
Capacity target by FY31	300 million tonnes per annum
Long range capacity target by 2047	500 million tonnes per annum
Per capita finished steel consumption, FY25	108 kilograms, against 601 kilograms in China

### Table A2: FY26 Financial Performance of Major Listed Producers

Company	Revenue, rupees crore	Operating margin	Net profit, rupees crore
Tata Steel, consolidated	2,32,140	15 percent	about 10,886
JSW Steel, standalone	1,85,470	16 percent	25,508, including exceptional items
SAIL, standalone	42,955	13 percent	3,185

### Table A3: India's Global Rankings in Key Metals and Minerals

Metal or mineral	India's global rank
Crude steel	2nd largest producer
Primary aluminium	2nd largest producer
Coal	2nd largest producer
Iron ore	4th largest producer
Refined copper	6th largest producer

## Appendix B: Glossary of Key Terms

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- Crude steel: the basic, unfinished steel output of a steelmaking furnace, before further rolling or finishing into products such as sheets, bars, or coils.
- Finished steel: steel that has been rolled, processed, or otherwise converted from crude steel into a usable end product form, such as hot rolled coil, rebar, or wire.
- MTPA: million tonnes per annum, a standard unit for expressing the annual production or capacity of a metals or mining facility.
- Safeguard duty: a temporary trade tariff imposed to protect a domestic industry from a sudden surge in imports, distinct from a permanent customs duty.
- Specialty steel: higher value, technically differentiated steel grades used in applications such as defense, aerospace, automotive, and electrical steel, as opposed to commodity grade construction steel.
- Green steel: steel produced using lower carbon methods, such as electric arc furnaces powered by renewable electricity or hydrogen based direct reduction, as opposed to traditional coal fired blast furnace production.
- Production linked incentive, PLI: a government scheme that provides financial incentives to manufacturers based on incremental production, used in India to encourage specialty steel and other strategic manufacturing capacity.
- Carbon border adjustment mechanism, CBAM: a European Union policy that imposes a carbon cost on imported goods, including steel and aluminium, based on the emissions intensity of their production, intended to prevent carbon leakage.
- Vertical integration: a business strategy in which a company controls multiple stages of its supply chain, such as a steelmaker owning its own iron ore mines, to reduce input cost volatility and supply risk.
- Captive mine: a mine whose output is dedicated to supplying a specific company's own production facilities rather than being sold on the open market, though recent policy reforms allow captive mine owners to sell a portion of output externally.

## Sources and References

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*This report draws on data and analysis from the World Steel Association, India's Ministry of Steel, Ministry of Mines, Joint Plant Committee, India Brand Equity Foundation, Department for Promotion of Industry and Internal Trade, S&P Global, and company filings and results disclosures from Tata Steel, JSW Steel, SAIL, Hindalco, Vedanta, and NALCO, alongside market commentary from Business Standard, Outlook India, and other financial media. All figures are the most recently available at the time of writing and are subject to revision as underlying institutions update their datasets.*

*Prepared by Krish Gupta, Kanav Bajaj, and Vidit Garg for Altivus Consulting. For questions or feedback on this report, please reach out through Altivus.*