

MET INFO

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Electrochemical Technologies for Iron Production

Direct electrolysis of iron ore could establish a niche role in smaller-scale green iron production by utilizing lower-grade iron ores without extensive ore preparation, lower infrastructure needs and, particularly in low-temperature processes, by operating more effectively with intermittent renewable electricity.

While the energy consumed in the electrochemical process rivals conventional ironmaking, the scale of clean electricity required presents a challenge for its widespread adoption.

The scalability of electrochemical ironmaking remains uncertain as the process must be demonstrated at a commercial scale due to the fundamental changes it introduces to conventional iron production methods.

Regardless of whether renewable electricity is used to produce green hydrogen or directly reduce iron through electrolysis, greater investment in firm renewable electricity will be essential to decarbonise primary steel production.

While electrochemical technologies are mature and widely used in metal production, they have only just begun to attract attention in the steel sector as the global effort to decarbonise industry intensifies.

Direct iron electrolysis has advantages over other ironmaking processes but questions over its scalability and commercialisation could limit its role in transforming one of the world's most carbon-intensive industries.

There are three major electrochemical pathways for ironmaking:

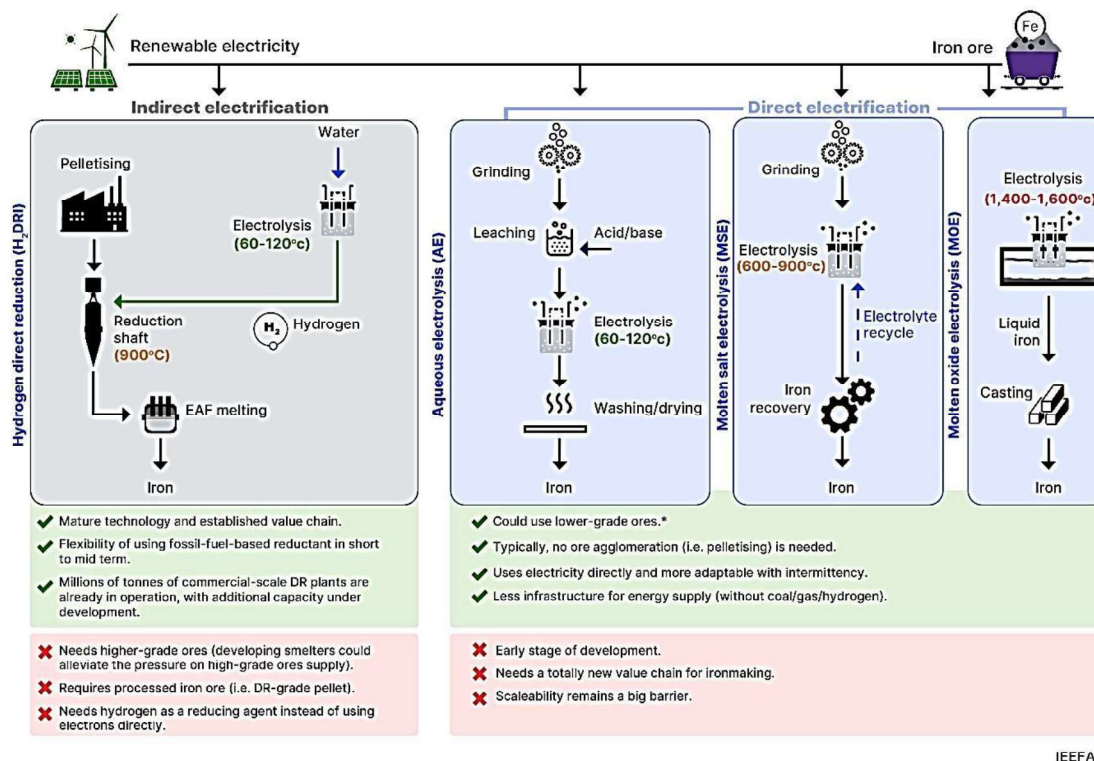
- Low-temperature electrowinning : operates at 20–120°C
- Molten salt electrolysis (MSE) : 800–1,100°C
- Molten oxide electrolysis (MOE) : <1,600°C.

Each process uses iron ore either dissolved in solution or suspended in an electrolyte at varying temperatures; with electricity passed through to reduce the ore into pure iron. Each has its own advantages and challenges, which developers around the world are striving to overcome.

Theoretically, electrolysis, when powered by clean electricity, has the potential to produce near-zero-emissions iron, and has been identified as a potential solution to the global steel decarbonisation challenge.

Among these pathways, MOE and electrowinning in aqueous solution with real world initiatives are better understood, whereas MSE remains less advanced.

However, significant technical and commercial challenges remain before the technology can be deployed at scale.



US-based Boston Metal has been at the forefront of iron electrochemistry, attracting backers including major steelmakers and iron ore producers, such as BHP, Vale, ArcelorMittal and Tata Steel. However, it suffered a serious technical setback at its Brazil plant in January 2026, underlining the precarious nature of this nascent technology.

Elsewhere, Electra and Volteron are trialling separate direct iron electrolysis pathways at pilot plants. In Australia, Fortescue and Element Zero are also pursuing variations of the process, albeit at much earlier stages of development.

Round-the-clock access to clean energy is a prerequisite for green iron and steelmaking, however, the intermittent nature of renewable energy adds a further layer of complexity to the technical challenges of decarbonising via electrochemical processes. Electricity is the primary cost driver in iron production via electrolysis. Therefore, access to abundant, low-cost clean electricity will be a key factor in the commercial viability and widespread deployment of electrochemical ironmaking.

Beyond the availability of firmed renewable electricity, some electrochemical ironmaking technologies may offer greater operational flexibility in electricity consumption. Some studies identify the ability to operate directly on renewables as a

potential advantage of direct iron electrolysis, suggesting some processes may be more tolerant of intermittent power supply.

Electrochemical ironmaking remains in its infancy. Developers face a long road ahead to prove the technology can work at scale and compete in the global market. Production is limited to tonnes per day, at best. To challenge mature, clean technologies such as hydrogen-based direct reduced iron (H₂-DRI), the technology must be scaled up significantly. Although scaling up is the primary roadblock, integration and adoption challenges loom large as well.

Overcoming the technical challenges associated with direct electrolysis is only part of the transition. The adoption of an entirely new system would require a fundamentally different ironmaking value chain, one that is largely unfamiliar to the steel industry. Despite these challenges, electrochemical ironmaking takes a novel approach to the steel industry's decarbonisation crisis.

It has unique advantages that differentiate it from other pathways. In particular, the ability to use lower-grade iron ores with minimal or no processing (even magnetite ore as low as 35% Fe) and, in the case of low-temperature processes, greater compatibility with intermittent renewable electricity.

By eliminating the use of coal, gas and even hydrogen as reducing agents, electrolysis requires less energy infrastructure at the steel plant, such as bulk handling systems, pipelines, storage facilities and related port infrastructure. The overall process configuration is simpler, as it removes the need for several upstream processing steps, including coke making and agglomeration processes such as sintering and pelletising.

These characteristics could enable direct electrolysis to establish a niche role in smaller-scale green iron production, particularly in regions with abundant renewable energy resources and access to lower-grade iron ores, even in the absence of an existing steelmaking industry.

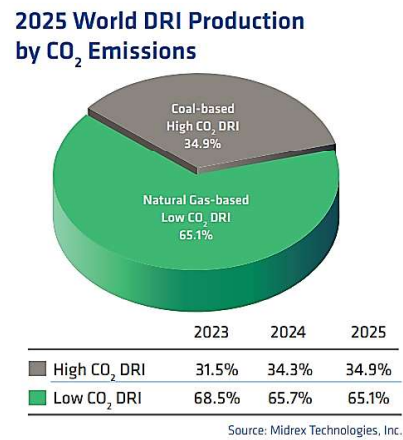
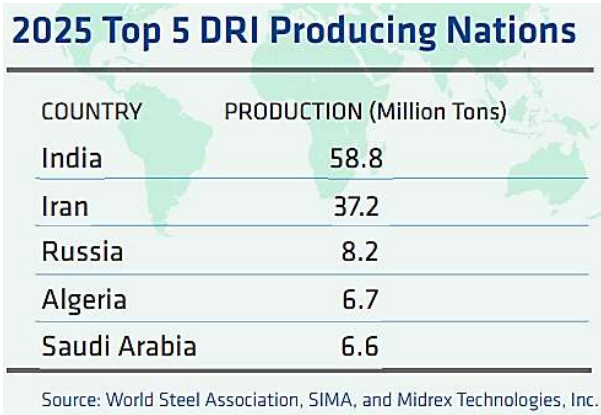
Source: IEEFA Friday Week in Review, 29 August 2026

World DRI Production in 2025

Global direct reduced iron (DRI) production in 2025 reached a new record of 151.0 million tons (Mt), surpassing the previous record of 140.8 Mt set in 2024 by 10.2 Mt, or 7.2%. Since 2020, worldwide DRI production has increased by 46.2 Mta (44.0%), reflecting continued growth in both gas-based shaft furnace and coal-based rotary kiln production. Growth was led primarily by rotary kiln-based production in India, which increased by 4.5 Mt (9.8%), while gas-based shaft furnace output rose by 5.8

Mt (6.1%). Together, India and Iran accounted for more than 63% of global DRI production, with year-on-year increases of 7.4% and 9.0%, respectively. New natural gas-based capacity came online in Bolivia, and continued expansion supported growth in Algeria, India and Iran.

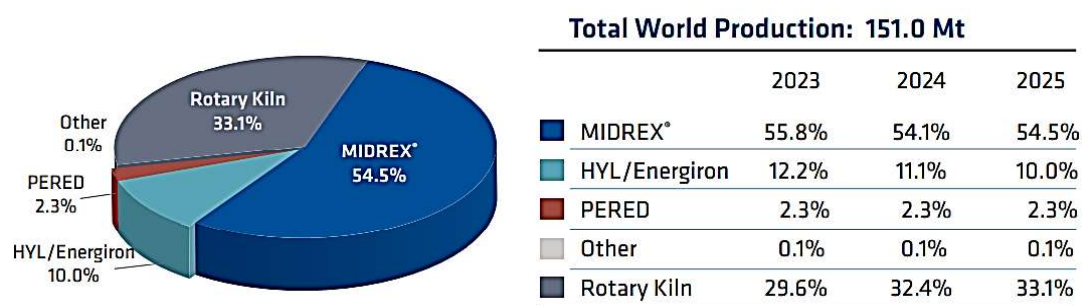
MIDREX® Plants produced a record 82.3 Mt of DRI during 2025, exceeding the prior record of 76.2 Mt in 2024 by 6.1 Mt, or 8.0%. The MIDREX® Process supplied 54.5% of total global DRI production and accounted for 81.5% of all shaft furnace DRI output worldwide.



Since 2020, worldwide DRI output has grown by 46.2 million tons per annum (Mta), or approximately 44.0%. Over the same period, natural gas-based DRI production grew by 21.8 Mta / 27.5% and coal-based rotary kiln DRI production (in India and South Africa) increased by nearly 24.6 Mta / 97.4%. In the last decade, DRI production has grown by 78.4 Mta, or approximately 107.9%, or a compounded annual growth rate of 7.6%. Over those 10 years, shaft furnace production increased by 43.5 Mta / 75.8% (CAGR 5.8%), and rotary kiln production increased by 35.3 Mta / 239.3% (CAGR 13.0%).

As in previous years, India continued to be the largest DRI producer worldwide, producing a record 58.8 Mt of DRI, a 7.4% year-on-year increase according to the Sponge Iron Manufacturers Association (SIMA) of India. India’s DRI production includes 49.9 Mt from coal-based rotary kilns, an increase from 45.5 Mt in 2024, and 8.9 Mt by gas-based processes, a decrease from 9.4 Mt in 2024. Rotary kiln DRI production increased 9.8% year on year and by 24.6 Mta over five years, equivalent to a five-year CAGR of 14.6%. Coal-based DRI production in India constitutes most of the high CO2 DRI produced worldwide in 2025.

2025 World DRI Production by Process



Source: Midrex Technologies, Inc.

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Source: 2025 World Direct Reduction Statistics

India's Steel and Raw Materials Performance in H1CY'26

India's steel industry remained resilient in H1CY'26 as it faced a major stress test with the Middle East conflict triggering a sharp rally in crude oil and natural gas prices, lifting freight and energy costs across the steel value chain.

Steel production and consumption increased in H1CY'26, albeit at a slower pace, while exports surged. Although imports rose, steel prices recovered to near three-year highs -- a divergence from H1CY'25 when prices hovered near four-year lows as steelmakers struggled to gain pricing power amid elevated volumes of low-priced imports.

Steel industry highlights

Steel production rises 8%, consumption growth slows to 6%

India's crude steel production rose 8% y-o-y to 87 million tonnes (mnt) during H1CY'26, slowing marginally from the 9% growth recorded in the year-ago period. Parallely, finished steel production increased by 8% to 84 mnt.

While rapid capacity growth and policy support continued to drive crude steel production higher, the pace softened. A blast furnace relining at one of the country's largest steelmakers, production disruptions following fatal accidents at several integrated mills, and higher coking coal and energy costs curbed output.

Provisional Joint Plant Committee (JPC) data shows that after the US-Iran conflict broke out in end-February, India's crude steel production grew merely 3% in Q2CY'26 to 42.1 mnt.

However, consumption growth slowed to 6% in H1CY'26 compared to 10% in H1CY'25. The spike in crude oil prices pushed up freight and operating costs, delaying manufacturing production schedules and lifting the cost of project execution.

To illustrate, FICCI's manufacturing survey showed the share of firms reporting higher or unchanged production dropping to 77% in Q1FY'27 from 93% in the previous quarter, signalling softer industrial activity. Demand from the construction sector also softened amid weak housing activity, labour shortages, and heatwaves.

Public investment, however, remained a bright spot, with capital expenditure by 63 central public sector enterprises rising 26% y-o-y to INR 2.1 trillion in April-June 2026, equivalent to 25% of their FY'27 target and higher than the 22% achieved of the target in Q1FY'26.

Steel trade deficit shrinks as exports surge

India's steel trade deficit shrank to just over 0.25 mnt during H1CY'26, contracting markedly from over 0.7 mnt a year ago.

Steel exports rose 34% y-o-y to 3.95 mnt after falling 24% in H1CY'25. While exports to the EU, the largest market for Indian exporters, were constrained, as buyers largely stayed out of the market ahead of the revised safeguard regime that came into force on 1 July. Uncertainty over lower Indian allocations, higher out-of-quota duties, and additional compliance requirements under the Carbon Border Adjustment Mechanism (CBAM) delayed purchasing decisions.

Consequently, Indian exporters turned to Vietnam and the Middle East, where demand was stronger, supply was tight due to the absence of Iranian steelmakers, and restrictions or duties existed on the entry of Chinese steel. In fact, as per bulk vessel line-up data, the top importing countries of Indian hot-rolled coils (HRCs) were Vietnam and the UAE.

Meanwhile, imports rose more slowly by 12% to 4.2 mnt despite the safeguard duty on flat steel imports. Earlier, imports had fallen 14% y-o-y in H1FY'25.

While the safeguard duty helped protect producers from price undercutting, HRC imports rose due to procurement under the Advance Authorisation Scheme. Export-oriented pipe and tube manufacturers had ramped up Chinese imports under the Advance Authorisation Scheme, which allowed them to avoid the safeguard duty and BIS quality norms that would ordinarily apply to steel reaching the domestic

market. As such, Chinese HRC imported under the scheme turned commercially viable in April-May.

Raw materials

Iron ore production jumps but imports surge too, exports recover

India's iron ore production rose 18% y-o-y to 184 mnt in H1CY'26, more than twice the pace of crude steel production growth. Higher mining capacity and aggressive production ramp-ups by miners, particularly NMDC and Lloyds Metals and Energy (up 26% and 53% y-o-y, respectively in Q2CY'26), drove the increase.

Amid stronger domestic production, iron ore exports, including of pellets, increased 11% y-o-y to 15.5 mnt. A subdued domestic spot market in Q2 prompted miners to tap export opportunities as higher international iron ore prices improved realisations. Demand strengthened too, as Chinese mills focused on building inventories. Meanwhile, the depreciation of the Indian rupee against the US dollar enhanced export competitiveness.

However, stronger production failed to stem imports, which surged 29% y-o-y to 6 mnt. Demand for high-grade, low-impurity ore remained firm as integrated mills sought to improve blast furnace efficiency, while competitive cargoes from Brazil and South Africa, logistical bottlenecks in Karnataka, and higher domestic ore prices supported imports.

Coal production drops, so do imports

Metallurgical coal imports edged up 1% y-o-y to 41 mnt as higher blast furnace output kept demand firm despite elevated prices. However, the rise was largely concentrated in coking coal, whose imports grew 14% y-o-y to 34.7 mnt. Meanwhile, mills reduced procurement of pulverised coal injection (PCI), with imports down 40% at 6.3 mnt, likely amid weaker economics for PCI relative to coal or optimisation of PCI injection rates.

Scrap imports decline amid higher costs, generation surges

Scrap imports fell 40% y-o-y to 3.2 mnt as a weaker rupee and higher freight costs lifted landed costs, and alternatives such as sponge iron and domestic scrap remained cheaper. Supply also tightened in key exporting markets, particularly the US, where stronger domestic steel production supported local scrap demand and reduced export availability.

Additionally, domestic scrap generation jumped 32% y-o-y to 20 mnt as more vehicle scrappage centres became operational and collection networks expanded. Improved

local availability allowed steelmakers to rely less on overseas supplies, especially given higher landed costs.

Outlook

Overall, the biggest takeaway from H1CY'26 is that India's steel industry proved capable of sustaining growth despite a sharp external cost shock. Similarly, while capacity additions and public infrastructure spending are expected to keep steel production on an upward trajectory in H2CY'26, demand may remain softer than CY'25 as manufacturers continue to face headwinds from elevated energy costs, supply chain disruptions, a weak monsoon, and global trade uncertainty.

Source: BigMint Bureau 09 Jul 2026

Tata Steel Deploys Coke Oven Gas Injection in BF

Tata Steel deploys India's first coke oven gas injection technology at Odisha unit. The initiative underscores the company's commitment to its 'Net Zero by 2045' target and highlights its leadership in deploying breakthrough technologies for low-carbon iron and steel production.

With support from technology partner Paul Wurth-SMS and equipment supplier Kobelco, Tata Steel has implemented the coke oven gas injection in the blast furnace, substituting fossil fuel as a reductant, thereby reducing the environmental impact. In a first-of-its-kind initiative in the country's steel industry, Tata Steel has commissioned a coke oven gas injection project at the blast furnace in its Meramandali plant in Odisha.

This initiative of maximising the utilisation of gases to reduce dependence on external fossil fuels reinforces Tata Steel's leadership in sustainable manufacturing, focussing on demonstrating and scaling low-carbon technologies, thereby accelerating journey towards Net Zero by 2045.

By finding a productive use for coke oven gas within the blast furnace process, Tata Steel aims to make its operations leaner and cleaner.

In an integrated steel plant, coke oven gas - a hydrogen- and hydrocarbon-rich by-product gas - is typically used for power generation, heating, or simply flared. Apart from reducing fossil fuel consumption and carbon dioxide emissions, it also provides a unique opportunity to operate the blast furnace with a three-fuel system, enhancing operational flexibility and efficiency, a company official said.

Tata Steel has been adopting low-carbon blast furnace technologies, successfully demonstrating coal-bed methane, hydrogen, and biochar injection in the blast furnace.

Source: MRAI News Updates: 11th September, 2026

Global Steel Overcapacity Continues to Rise

Global steelmaking capacity is expanding much faster than demand, with worldwide overcapacity projected to reach **745 million tonnes by 2028**. This surplus is likely to place sustained pressure on prices, profitability, and investment across the sector.

India Emerges as the Fastest-Growing Major Steel Market

India remains one of the strongest growth centres in the global steel industry. Domestic steel demand expanded by **9.8 percent in 2025** and is projected to grow by another **6.7 percent in 2026**, supported by continued investments in **infrastructure, construction, manufacturing, transport and urban development**.

India's crude steel capacity increased from 144 million tonnes in FY21 to 200 million tonnes in FY25, representing a CAGR of 8.6 percent. During the same period, apparent steel consumption rose from 95 million tonnes to 152 million tonnes, growing even faster than capacity and confirming that recent additions have been demand-driven. India remains the world's fastest-growing steel market and is expected to retain that position for the next two decades.

With installed capacity now around 220 million tonnes, the industry remains broadly on track towards the National Steel Policy 2017 target of 300 million tonnes by 2031. The outlook is supported by three structural drivers: rising per capita incomes, large-scale infrastructure investments in expressways, railways, logistics parks and ports, and accelerating urbanisation. India's per capita steel consumption remains roughly half the global average, while urban areas are expected to add tens of millions of residents over the coming decades, sustaining demand for housing and construction.

To meet this demand, India added **41.4 Mt** of capacity between 2021 and 2025 and plans to add another **31.8 Mt** by 2028. These additions support the national objective of achieving **300 Mt of steelmaking capacity by 2030–31**.

India's strong demand growth temporarily transformed the country from a **net steel exporter into a modest net importer** during 2024–25. At the same time, expanding

domestic capacity could eventually create surplus production that will require access to export markets.

At the factory gate, Indian steel is already among the cheapest in the world. Yet a NITI Aayog assessment estimates that nearly USD 80 per tonne of additional costs are borne by the industry through levies, cross-subsidisation policies, logistics expenses and financing costs. Around 6-12 percent of duties faced by domestic producers are not subsumed under the Goods and Services Tax (GST), preventing input tax credit claims, while imported steel does not face equivalent burdens. In effect, while several economies are subsidising their steel industries, Indian steel is subsidising others, particularly through railway freight cross-subsidisation. These pressures are amplified by the nearly 550 million tonnes of excess capacity located around India, much of it supported by significant state backing.

Against this backdrop, import duties and safeguard measures are intended to address predatory and opaque trade practices rather than shield domestic producers from competition. Similar concerns have led the European Union to impose countervailing duties of up to 35.9 percent on selected Chinese steel products.

Looking ahead, the policy objective should be competitive neutrality. Strengthening Rules of Origin provisions to prevent rerouting and circumvention, while ensuring that downstream industries continue to access steel at market-based prices, will be essential to preserving both manufacturing competitiveness and investment momentum.

Emerging Green Steel Opportunity

India is in strong position in **Direct Reduced Iron (DRI)** production. Together, India and Iran account for more than **70 percent of global DRI output**, creating opportunities to accelerate the transition towards **Electric Arc Furnace (EAF)** technologies and future **green-hydrogen-based steelmaking**.

Persistent global overcapacity can weaken the commercial case for investing in low-emission steel production by placing downward pressure on prices and reducing the ability of producers to recover the higher costs associated with green technologies. This makes policy design particularly important during the steel sector's decarbonisation transition.

Green steel production remains more expensive than the conventional blast furnace-basic oxygen furnace route, making targeted support critical. Indian steelmakers are already piloting hydrogen integration in direct reduced iron-electric arc furnace operations, hydrogen injection in blast furnaces and carbon-capture technologies.

The Government of India has also sanctioned multiple projects under the National Green Hydrogen Mission.

Creating demand through green public procurement, private-sector incentives and fiscal support will be vital for bridging the green premium. Combined with technology deployment and policy support, these measures can help major Indian steel producers achieve their net-zero commitments by 2050, twenty years ahead of the national target, while delivering meaningful reductions in emissions intensity by 2030.

Source: OECD Steel Outlook 2026

India: The Next Big Asian Aluminium Hub

India stands as the world's second-largest producer of primary aluminium, contributing roughly 5.5% to 8% of global output, backed by an industrial framework of fully integrated domestic producers and specialised downstream manufacturers. The primary aluminium ecosystem is anchored by national champions NALCO, Hindalco, Vedanta, and BALCO, which command a combined primary smelting capacity of approximately 4.3 million tonnes (MT).

Driven by rapid urbanisation, infrastructure development, and a clean energy transition, India's annual aluminium consumption has climbed to 4.5-5 MT, making it the third-largest consumer globally. However, the domestic market is highly unequal: per capita consumption rests at just 3.4kg, vastly lagging the global average of 8-12 kg. Consequently, India routes 60% (approx. 2.6 MT) of its current primary aluminium output to international export markets. Backed by expanding capabilities, India is uniquely positioned to transition into a major global supply and downstream consumption hub.

The structural paradox

Domestically, around 48% of aluminium is consumed by the power transmission sector. Because primary producers price their metal at "import-parity" levels (inflated by a 7.5% import protection duty), the domestic market is expensive for local downstream manufacturers. Consequently, India exports massive volumes of raw, primary aluminium while importing finished downstream goods and aluminium scrap (over 2MT of scrap imported annually).

Supply-side dynamics

Over the last few decades, India's aluminium production ecosystem has transitioned from a localised domestic setup into a globally competitive powerhouse. This

strategic positioning has gained a stronger international momentum due to the shifts in Western policy, trade redirections, and sanctions on major alternative hubs like China and Russia.

Raw material base

India holds the world's 8th largest bauxite repository, counting roughly 4.9 billion tonnes of resources, which includes 646 MT of proven reserves and 4.3 billion tonnes of remaining resources. Metallurgical-grade bauxite comprises nearly 79% of these resources, providing an intrinsic competitive edge for local primary refining. Domestic bauxite excavation hit record operational highs in FY2025-26.

Smelting capacity and production trends

While the addition of brand-new greenfield smelting complexes has been steady, domestic plants have achieved exceptional capacity utilisation. Average operational utilisation rates surged from 59% in FY2015-16 to cross 100% by FY2024-25, fuelled by deep order books across the power, infrastructure, and automotive segments.

Supply and decarbonisation forecast

The Government of India's official Aluminium Vision Document 2047 charts a clear path to scale total national output sixfold, aiming to ramp up current operational capacities to 37 MTPA by 2047 to claim a 10% share of global production.

Medium-term supply projections

Total annual aluminium supply in India (combining primary and secondary) is forecasted to expand at a CAGR of 3.3%. Supplies are projected to rise from ~6 MTPA in 2025 to 9 MTPA by 2030, and hit 18 MTPA by 2040.

Primary vs. secondary aluminium mix shifts

To foster a circular metal economy and alleviate reliance on imported scrap, the government has integrated policy frameworks targeting formalised scrap collection alongside mandated recycling thresholds for finished products by FY2030.

Unlike the highly fragmented domestic steel industry, primary aluminium capacity additions remain concentrated among existing major players due to steep capital requirements. Vedanta leads the near-term expansion charts with major ongoing clean-energy powered capacity expansions underway in Odisha, targeting a progression toward a 3 MTPA footprint.

Supply-side bottlenecks

- **Capital and energy intensity:** Primary smelting requires continuous, substantial capital outlays per tonne of capacity and demands an uncompromised, high-load energy infrastructure.
- **Carbon footprint realities:** Coal-fired captive power setups mean Indian primary production carries an average emission intensity of 20 – 21 t CO₂/ t, which is higher than the global primary average of ~15 t CO₂/t. Conversely, secondary/recycled aluminium creates a mere 0.4– 0.6 tCO₂/t, representing a key lever for carbon mitigation.
- **Bauxite access hurdles:** Despite vast deposits, environmental clearances, local protests, and regulatory restrictions in tribal-dominated areas continue to delay major greenfield bauxite mine operationalisation.
- **Underdeveloped downstream ecosystems:** While downstream demand is rising, deep-tier structural consumption inside high-value sectors (such as aerospace, advanced packaging, and structural automotive lightweighting) remains low relative to international mature markets.

Demand prospects and drivers

India's aluminium demand is likely to multiply, driven by initiatives such as "Make in India", Urbanisation, Smart cities, housing for all and large-scale infrastructure development. According to projections by the Ministry of Mines, India's domestic aluminium demand is on track to grow dramatically:

[FY2024] 4.9 MT —► [FY2030] 8.5 MT —► [FY2040] 18 MT —► [FY2047] 28-37 MT

This structural demand acceleration is underpinned by a broader macroeconomic goal: supporting India's long-term trajectory toward a multi-trillion dollar economy by 2047.

Key demand segments

India's aspiration to become a USD 30 trillion economy by 2047 outlines a highly ambitious growth trajectory. Achieving this vision requires a sustained and accelerated economic expansion, which is expected to significantly boost aluminium demand in key sectors such as infrastructure, transportation, power, and manufacturing.

- **Electrical & power grid infrastructure:** Continues to be the single largest consumer segment, driven by large-scale grid modernisations and green energy transmission pipelines.
- **Transportation & automotive:** Spurred by automotive lightweighting, systemic railway modernisation (including high-speed rolling stock), and the rapid domestic expansion of Electric Vehicles (EVs).

- **Construction & smart cities:** Flagship infrastructure initiatives, such as the National Infrastructure Pipeline and the Smart Cities Mission, are driving high-volume consumption of architectural extrusions and structural panels.
- **Packaging, aerospace, and defence:** Rising urban incomes have steadily accelerated the adoption of sustainable aluminium packaging, aided by governmental crackdowns on single-use plastics. Concurrently, the 'Make in India' mandate is driving localised demand for high-grade plates, components, and alloys in military hardware and aerospace manufacturing.

Aluminium is also widely used in extrusions, plates, and components across industries. Under Make-In-India initiatives, growing air travel & defence modernisation, aluminium demand in aircraft & military hardware is likely to see a potential boost in the coming decade.

Strategic and macro challenges

Geopolitical & shipping Risk

Earlier, the war in Ukraine and now the West Asian conflicts have proved that geopolitical risks can disrupt the industry dynamics across the globe. India's aluminium and raw material trade remains exposed to geopolitical conflicts due to shared shipping routes and import dependency for crucial input materials. The disruptions in the Strait of Hormuz shot up the freight costs and negatively affected imports of key input material of calcined petroleum coke (CPC) for aluminium smelting, along with gas.

Meanwhile, for the secondary raw materials (aluminium scrap), the war in the Middle East has worsened the availability of imported scrap, as the UAE and Saudi Arabia remain two key suppliers of aluminium scrap to India. Meanwhile, the same impacted India's exports of alumina to the Middle East and that of primary aluminium to the EU and the US.

Raw material import dependency

Although India's local bauxite base could technically support a primary output capacity of up to 20 MTPA under ideal operating conditions, the industry faces severe structural shortages. Bauxite mining in India remains a complicated issue with a large volume of reserves remaining inaccessible due to community rights and other regulations. India is heavily reliant on imports for critical inputs, including high-grade coal, CPC, caustic soda, and Aluminium Fluoride (AlF₃).

Hence, the planned capacity expansion will need additional secondary production. Furthermore, due to an underdeveloped domestic scrap recycling infrastructure, the secondary aluminium industry imports 1.5 to 2 million tonnes of scrap annually,

primarily sourced from the US, UK, Middle East, and ASEAN nations, to meet the rising demand of secondary aluminium from the auto and electronics sectors. India's per capita aluminium consumption remains low, and the generation of end-of-life recyclable aluminium remains limited. This calls for increasing the volume of domestic scrap, especially from auto recycling.

Round-the-clock renewable energy (RTC-RE)

The availability of round-the-clock renewable power remains a challenge for the aluminium producers in India. The primary producers have set out their carbon emission targets, but there is a long way to go before they secure uninterrupted renewable power. Aluminium smelting has several operational challenges due to its very high energy requirements and the need for a constant, uninterrupted power supply. A shift to renewable energy can further create issues with intermittent power and the stability of operation.

Hence, they are producing small volumes of low-carbon aluminium, simultaneously powered by renewable energy. The government has set a target of transitioning to a Renewable-Energy-Round-the-Clock (RERTC) power and Grid connection by 2030. The implementation of renewables in the aluminium sector will need enhanced collaboration, close industry-government partnership, and policy support. This should go hand in hand with the integration of renewable energy, efficient recycling, and low-carbon production methodologies.

CBAM compliance and carbon tariffs

The European Union's Carbon Border Adjustment Mechanism (CBAM) entered its fully operational compliance phase on January 1, 2026, penalising high-emission metal imports. Given that the EU purchases roughly 27% of India's total exported aluminium, CBAM presents a major commercial challenge.

The early effects of these regulations are already apparent in trade data: year-to-date (YTD) volumes of unwrought Indian aluminium shipped to the EU fell from 18,653.8 tonnes as of January 2025 to 10,874.72 tonnes by YTD January 2026, a sharp 41.7% drop.

To cushion these carbon tariff penalties, local exporters may face price reductions of 15–20%. This has accelerated domestic efforts to reduce emissions, backed by the implementation of the national Carbon Credit Trading Scheme (CCTS) to reduce GHG emission intensity by 45% by 2030 (relative to 2005 baselines). This is one of the key reasons India is recalibrating its supply strategy by focusing on emission reduction.

Resource disconnect & regulatory clearances

While India possesses the fifth largest bauxite reserve globally, large swathes of high-quality deposits remain locked or underutilised due to complex land acquisition hurdles, environmental/forest clearances & a lack of railway infrastructure in remote, mineral-rich regions.

Vulnerability of MSMEs

The downstream ecosystem is driven by over 3500 MSMEs operating at an average capacity utilisation of 50%. They are squeezed by high domestic primary metal prices and a global scrap market.

Conclusions

Despite facing bauxite mining delays, import dependencies, and strict new international carbon tariffs, India's aluminium industry is entering a resilient growth phase. High domestic capacity utilisation, comprehensive corporate brownfield expansions, and robust state planning position the country well in the sector. As strict output caps limit China's expansion and trade restrictions alter Russian supply routes, India is strategically positioned to step up as the next premier global hub for aluminium production and export.

Source: AL Circle 11 June 2026; Edited by Dr Subodh Das

Slow Progress on Green Steel

Delays to green steel projects are jeopardising the industry's drive to cut emissions. About half of the world's planned green steel projects have already been delayed.

Progress on cutting emissions has been slow and is likely to remain so without a major increase in state funding or customers willing to pay more for cleaner steel, in spite of encouraging developments in renewable energy and clean technology.

Green steel - generally steel produced with a lower carbon footprint - is critical because the industry accounts for about 7% to 9% of global emissions.

Yet the current global project pipeline would deliver only about 70 million metric tons of green steel a year by the end of the decade, a fraction of the roughly 2 billion tons of total steel production forecast.

Roughly half of that already modest pipeline has been delayed by financing constraints, weak demand or shortages of green hydrogen.

Over the past 10 years, steel emission intensity remained almost flat despite commitment among steelmakers to reduce carbon emissions (emissions per ton of steel produced).

Investment in conventional blast furnaces continues across India and Southeast Asia. Many of those facilities have lifespans of up to 40 years, locking in emissions for decades. New blast furnace capacity planned in the two regions between 2024 and this year roughly matches the size of the entire global green steel pipeline.

Producing green steel is good, but survival is first.

Source: Economic Times News, ePaper, 22 June 2026

India's Steel Future will be Shaped by Data, AI and Smart Factories

AI and automation are crucial for boosting steel sector competitiveness, efficiency and growth.

India's steel industry must move beyond capacity expansion and embrace intelligent, technology-driven manufacturing if it is to remain globally competitive and support the country's long-term economic ambitions.

Digital transformation is a strategic necessity rather than a future aspiration. it has become the foundation for the industry's long-term growth and resilience.

Steel industry would play a critical role in supporting infrastructure development, manufacturing expansion, renewable energy projects, urbanisation, transportation networks and defence production.

Steel is the backbone of nation-building. India has maintained its position as the world's second-largest steel producer since 2018 despite weak demand conditions in several advanced economies.

Sector's performance in recent years has been strong, with crude steel production growing at an average annual rate of nearly 8 per cent since FY22 and finished steel consumption rising by around 13 per cent annually, driven by robust domestic demand and industrial growth.

Considering target of expanding steelmaking capacity to 300 million tonnes by 2030 and 400 million tonnes by 2035, the industry must simultaneously address challenges related to raw material security, operational efficiency, decarbonisation and export competitiveness.

The next phase of growth will be shaped not only by production volumes but also by how effectively steel companies adopt emerging technologies such as Artificial Intelligence (AI), Machine Learning (ML), Industrial Internet of Things (IIoT), Digital Twins, Robotics and Advanced Data Analytics.

These technologies have the potential to improve productivity, optimise energy consumption, reduce costs and strengthen operational reliability. Digital tools can also support predictive maintenance systems that identify equipment failures before they occur, helping companies minimise downtime, reduce human error and improve workplace safety.

Future of India's steel sector would increasingly be shaped by data, automation and intelligent manufacturing systems, making digitalisation a key pillar in the country's journey towards Atmanirbhar Bharat and Viksit Bharat 2047.

Source: Address of Hon. Minister for Steel and Heavy Industries Shri H.D. Kumaraswamy, Chintan Shivir 2026 on Digitalisation in the Steel Sector

How India's Steel Industry became the World's Second Largest Producer

India has emerged as the world's second-largest producer of steel, driven by rising demand, policy reforms, expanding capacity and growing focus on speciality steel.

India primarily produces basic steel for infrastructure, but evolving demands in the automotive and construction sectors require speciality steel with niche properties.

Over the last two decades, India's steel production has expanded rapidly. From producing less than 1% of global steel output and ranking ninth in 2000, India has become the world's second-largest producer, accounting for nearly 9 % of global steel output by 2023, behind only China, which produces about half the global steel output.

India's crude steel production expanded from 28 million tonnes in FY'02 to 152 million tonnes in FY25. This is a result of robust domestic steel consumption, growing at an annual rate of 7.6% between 2002 and 2025. India is a growing and developing country in the midst of urbanisation. With large-scale urban infrastructure projects underway, it has and will continue to have a strong steel demand.

Are we self-sufficient in steel?

Although India produces enough steel to meet its overall volume requirements, it imports speciality steel. India primarily produces basic steel for infrastructure, but evolving demands in the automotive and construction sectors require speciality steel with niche properties. To meet this need, industries are importing premium steel from Japan and South Korea. Moving forward, India must scale up its domestic production of speciality steel to correct this trade imbalance.

Who are the major steel producers in India?

The steel industry's growth is led by large domestic private steel manufacturers. The top five firms by market share account for 40-45 % of domestic output since 2000. These are Tata Steel, JSW Steel, SAIL, Jindal Steel & Power and ArcelorMittal Nippon Steel India. As of 2024, Tata and JSW account for around 12% of total market sales each, followed by SAIL at 9%. JSW Steel's market share rose from 1% in 2000 to 11.6% in 2024, while the share of SAIL, the historically dominant public-sector manufacturer, declined from 29% to 9%.

All five steel producers have captive mining operations of iron ore of varying degrees, meaning they own iron ore mines, a key ingredient for steel manufacturing. Given the 40-50% mark-up in the cost of iron ore to a miner versus its price in the market, captive mining provides a significant cost advantage to steel manufacturers.

What have been the major policy changes in steel?

The steel industry has gone through two distinct policy phases. The early 1990s saw delicensing and liberalisation of the sector, with automatic approval of foreign equity investment upto 51% in steel. Between 1990 and 2007, import tariffs were cut from 93% to 7%, following which the protection and benefits to the sector started to increase.

In 2007, the Indian government imposed the export duty on iron ore, the core raw material for steel, initially at 15% and increasing to 30%. The aim was to discourage exports and ensure an ample supply for the domestic steel industry. In 2017, the government mandated the use of only domestically manufactured steel for government projects, restricting competition from global players. Currently, quality control orders are applicable to 556 eight-digit HS codes of steel. In 2025, an additional 12% duty was applied on non-alloy and alloy steel flat products, over and above the existing 7% tariff, which is set to reduce by 0.5% every year in the subsequent three years.

What are the latest government programmes to promote steel manufacturing?

In 2021, the government launched a product-linked incentives (PLI) scheme for speciality steel to boost domestic production and reduce import dependence. Under this, the government provides financial incentives for production, technology upgradation and capacity expansion.

In 2024, the Ministry of Steel launched a roadmap for greening the steel sector as a long-term pathway for decarbonisation in line with India's net-zero 2070 target. They have allocated ₹455 crore for pilot projects till 2029-30. Interestingly, in 2025, Niti Aayog proposed reforms to ease imports in the steel sector by the downstream

industry, which suggested the removal of QCOs on 100 steel products. By April 2026, QCOs for approximately 50 steel products have been suspended by the Ministry of Steel.

How will CBAM affect India's steel sector?

The European Union's Carbon Border Adjustment Mechanism (EU-CBAM) is a climate policy tool aimed at reducing carbon leakage by imposing carbon tariffs on imports from non-EU countries with lower environmental regulations.

Although India's CBAM-exposed exports to the EU account for only 0.2% of India's GDP, the iron and steel sector constitutes 90% of these exports, making it particularly vulnerable.

*Source: Shishir Gupta, Rishita Sachdeva, Centre for Social and Economic Progress
(The Indian Express, 01 July 2026)*

Recovering Rare Earth Elements from Red Mud

Every electric vehicle, offshore wind turbine, advanced defence system and high-performance electronic device has one thing in common: their reliance on the rare earth elements (REEs). As global demand for REEs accelerates, governments and industries are intensifying efforts to secure reliable and sustainable supply chains. While conventional mining remains the primary source, growing concerns over resource security, environmental impact and rising demand are prompting a search for alternative sources of REEs.

Surprisingly, one of the most promising sources may already exist within the aluminium industry's largest by-product: Red mud.

During the Bayer process of alumina production, the bauxite residue is generated and has long been viewed as one of the aluminium industry's biggest environmental challenges. With global alumina production reaching approximately 154 million tonnes in 2025, an estimated 189.5 million tonnes of red mud were generated worldwide and this figure is projected to rise to more than 225 million tonnes by 2036 as alumina production continues to expand.

For decades, the industry's primary focus has been on safely storing and managing this highly alkaline residue. Today, however, the conversation is gradually shifting. Rather than viewing the residue as just a disposal challenge, researchers and aluminium producers are increasingly recognising its potential as a valuable secondary resource capable of supplying critical minerals, particularly REEs.

Why REEs have become strategically important in today's market dynamics

REEs are indispensable to modern manufacturing, especially in making permanent magnets, electric motors, wind turbines, robotics, consumer electronics, aerospace applications and defence technologies. As countries accelerate electrification and renewable energy deployment, demand for REEs is expected to remain strong for decades. But, at the same time, industries are seeking ways to diversify their sources of critical minerals. Recovering REEs from industrial by-products not only strengthens resource security but also aligns with broader sustainability and circular economy objectives by extracting additional value from materials that have traditionally been treated as waste.

This changing outlook has placed red mud firmly in the spotlight.

Why does red mud contain valuable REEs?

Although alumina is extracted from bauxite during the Bayer process, many naturally occurring minerals remain in the residue. Besides iron oxides, titanium-bearing minerals and other metal oxides, red mud also retains trace quantities of REEs. While these concentrations may appear modest, the enormous volumes of red mud generated every year create a significant cumulative resource.

The aluminium industry has already demonstrated that red mud can be utilised in applications such as cement, bricks, ceramics and road construction. However, recovering high-value minerals from the residue represents a far greater economic opportunity. Instead of simply reducing disposal volumes, resource recovery has the potential to transform red mud into a strategic raw material for multiple industries. This shift reflects a broader change in thinking, from waste management to resource optimisation.

What is preventing commercial-scale recovery?

While the recovery of REEs from the bauxite residue has made significant technological progress, large-scale commercial deployment still faces several challenges. One of the biggest hurdles lies in the complex composition of red mud itself. The residue varies considerably depending on the quality of bauxite, refining conditions and the Bayer process adopted by individual alumina refineries. This variability makes it difficult to develop a standard extraction process that can be applied consistently across different facilities.

Another challenge is the selective separation of REEs from other constituents present in red mud. Conventional extraction methods often dissolve iron, silica and other impurities alongside REEs, increasing downstream processing requirements and overall costs. Although advanced techniques such as selective acid leaching, ion-

exchange separation and integrated recovery processes are improving extraction efficiency, further optimisation is required to make these technologies commercially competitive.

Economic viability also remains a key consideration. Recovering REEs must deliver sufficient value to justify additional processing, energy consumption and reagent costs. As research continues and pilot-scale projects mature, improvements in process efficiency and integrated mineral recovery are expected to strengthen the commercial case. The growing global emphasis on securing critical mineral supplies is also likely to accelerate investments that can bridge the gap between laboratory success and industrial-scale implementation.

Technologies bringing commercial recovery closer

Extracting REEs from red mud is technically challenging. Conventional direct acid leaching can dissolve not only REEs but also unwanted components such as silicon and iron, making downstream separation complex and increasing processing costs.

To overcome these limitations, researchers and technology developers are focusing on more selective extraction methods that improve recovery efficiency while reducing reagent consumption.

Among the most promising approaches are:

- Selective acid leaching
- Ion-exchange separation
- High-pressure acid leaching (HPAL)
- Electric arc furnace pre-treatment
- Integrated recovery processes capable of extracting both iron and REEs

Each of these technologies aims to maximise the recovery of valuable elements while improving overall process economics. Selective extraction techniques reduce impurities entering subsequent processing stages, while integrated recovery approaches improve the overall value generated from red mud by recovering multiple minerals instead of targeting a single product. Although many of these technologies remain at the pilot or demonstration stage, continuous improvements are steadily bringing commercial-scale recovery closer to reality.

What this means for the aluminium industry

For decades, red mud has represented one of the industry's most persistent environmental and operational challenges. As alumina production continues to grow, so does the volume of bauxite residue, requiring long-term storage and

management. Recovering REEs presents an opportunity to change this narrative by transforming a waste management issue into a value-generation opportunity.

Rather than viewing red mud solely as a disposal liability, aluminium producers can increasingly consider it a secondary resource capable of contributing to additional revenue streams while reducing the environmental footprint of residue management. Coupled with ongoing efforts to recover other valuable components such as iron and titanium, rare earth extraction supports a more circular approach to alumina refining. As technologies continue to advance, resource recovery could become an integral part of future refinery operations, improving both sustainability and resource efficiency across the aluminium value chain.

Beyond aluminium: Why this matters to global industries

The significance of recovering REEs from the bauxite residue extends far beyond the aluminium industry. REEs are indispensable to electric vehicles, renewable energy systems, consumer electronics, aerospace applications and defence technologies, where all sectors are experiencing rapid growth and increasing pressure to secure reliable supplies of critical minerals.

Developing red mud as an alternative source of REEs can help diversify global supply chains while reducing dependence on conventional mining alone. Instead of relying exclusively on newly extracted resources, industries could increasingly source critical minerals from existing industrial by-products, supporting broader resource recovery and circular economy objectives. As governments and manufacturers continue prioritising supply chain resilience, successful commercialisation of rare earth recovery from red mud could play an important role in strengthening critical mineral security across multiple strategic industries.

The road ahead

The journey from industrial waste to strategic resource is still unfolding. While commercial-scale recovery of REEs has not yet become widespread, technological progress over recent years has demonstrated that the concept is no longer confined to research laboratories. Continued collaboration between alumina producers, technology developers, research institutions and policymakers will be essential to overcome technical and economic barriers and accelerate commercial adoption.

As extraction technologies mature and demand for critical minerals continues to rise, the value proposition of red mud is expected to evolve beyond waste management. Future alumina refineries may increasingly view bauxite residue not as the end of the production process, but as the beginning of another resource recovery opportunity.

Conclusions

The global pursuit of critical minerals is reshaping how industries perceive industrial by-products, and red mud is emerging as one of the most promising examples of this transition. Once regarded primarily as a disposal challenge, bauxite residue is now being recognised for its potential to contribute to future rare earth supply chains through continuous advances in extraction and recovery technologies.

Although commercial-scale implementation still faces technical and economic challenges, the momentum behind red mud valorisation continues to grow. For the aluminium industry, recovering REEs offers an opportunity to extract greater value from an existing by-product while supporting more sustainable refinery operations. Beyond aluminium, it represents a step towards more resilient and diversified critical mineral supply chains.

As innovation continues to close the gap between research and industrial application, recovering REEs from red mud could redefine how the world views one of the aluminium industry's largest residues, not as waste, but as a strategic resource for the industries of tomorrow.

Source: AL Circle Supplement, AL Monthly New

Global Stainless Steel Production: H1 CY2026

According to statistics from the, global stainless steel melt shop production reached 33 million tons in the first half of 2026, registering a 5% year-on-year increase. Asia drove this expansion, producing 28.3 million tons to account for nearly 86% of global output with a 6.1% year-on-year increase, led by China's 63.9% share. Conversely, the European Union's output fell by 3.7% to 2.9 million tons. Meanwhile, the United States' production rose by 2.3% to 1.1 million tons, supported by a heavy reliance on recycled metal feedstock.

Source: World Stainless Association, 31 Aug 2026

India's Iron Ore Production in H1 CY 2026

India's iron ore production climbed up sharply by 17% y-o-y in H1CY'26 to 184 million tonnes (mnt).

The surge was driven by operational ramp-ups at two of India's largest merchant miners -- National Mineral Development Corporation (NMDC) and Odisha Mining Corporation (OMC). Rapid mine development and capacity operationalisation also

drove an exponential 176% increase in output from Maharashtra-based Lloyds Metals and Energy Limited (LMEL).

Consequently, merchant production rose 25% y-o-y in H1CY'26 to 115 mnt, sharper than the 5% growth in captive production to 69 mnt.

Notably, iron ore production outpaced the 7% y-o-y growth in crude steel output in H1CY'26. This marks a sharp reversal from H1CY'25, when iron ore production rose just 3%, trailing the 9% increase in crude steel production.

Merchant miners drive increase in India's production in H1CY'26

NMDC's production up 24% y-o-y on capacity expansions: NMDC's production surged 24% y-o-y to 31.4 mnt, keeping the miner India's largest. The company enhanced production capacity in Chhattisgarh substantially: Deposit 14 was increased to 18.5 mnt/year from 10.5 mnt/year and Deposit 5 to 12 mnt/year from 10 mnt/year. This ultimately resulted in higher production from Chhattisgarh. NMDC has set a production guidance of 60 mnt for FY'27 compared to output of 53 mnt in FY'26. The miner has outlined a detailed roadmap for this, including commencing mining operations from Deposits 4 and 13 in Bailadila.

OMC's production rebounds amid operational efficiency: Reflecting a sharp recovery from the slower production momentum in CY'25, iron ore output from OMC increased by 28% y-o-y in H1CY'26, driven by operational ramp-ups. Production increased 65% y-o-y from its Gandhamardan mines (attributed to a change in the mine developer and operator model) and by 28% from its Daitari mine.

Lloyds records sharpest growth amid rapid capacity expansions: Lloyds recorded the sharpest y-o-y increase among all miners, as it ramped up capacity at its Surjagarh mines in Maharashtra. Lloyds approved environmental clearance (EC) volume surged to 26 mnt in FY'26 from 10 mnt in FY'25. In Q1CY'26, the company produced 9.1 mnt, up a massive 529%, attributed to operational ramp-ups and improved evacuation efficiency due to the company's slurry pipeline. Although production moderated to 6.05 mnt in Q2CY'26 due to seasonal factors and monsoon-related hurdles, output was still 53% higher y-o-y. Notably, the company plans to produce 26 mnt in FY'27, 18% higher than its FY'26 output of nearly 22 mnt.

Rising steel production supports ore demand

India's crude steel production increased by 7% y-o-y to 87 mnt in H1CY'26, effectively lifting demand for iron ore. Pellet production rose 14% y-o-y to 63 mnt, while sponge iron production climbed up moderately by 6% in H1CY'26, also contributing to iron ore demand.

Higher prices lift mining realisations

Domestic iron ore prices in H1CY'26 were also over 10% higher y-o-y, improving mining realisations.

Export momentum strengthens

Stronger export momentum also incentivised production. India's iron ore exports increased by 24% y-o-y in H1CY'26 amid healthy realisations, a weaker rupee, and sustained Chinese demand. Export realisations were at around INR 3,500/t in H1CY'26, rising INR 100/t from last year, allowing miners to maintain healthy overseas dispatches.

Captive producers record slower growth

Cumulatively, integrated steelmakers continued to increase captive mining at a much slower pace. Production trends were also mixed, with Tata Steel (7%), SAIL (9%), and AM/NS (5%) recording moderate growth. Conversely, JSW Steel and Jindal Steels output fell. JSW Steel continues to record decline: In CY'25, JSW Steel's production was consistently lower y-o-y, due to the surrender of the Jajang mines. In H1CY'26, iron ore production continued to decline, primarily from Odisha.

Among its three operating mines, production from Odisha-based Narayanposhi and Nuagaon (both auctioned mines) decreased by 41% and 21%, respectively. However, the company commenced production from its new Netrabandha mine in Odisha from April.

Notably, JSW Steel's approved mining capacity declined sharply to 29 mnt in FY'26 from 45 mnt in FY'25, primarily due to the surrender of the Jajang iron ore mine in Odisha, one of the company's key captive assets. Jindal Steel's production dips by 3%: Jindal Steel's production dropped marginally by 3% y-o-y, mainly due to lower output from its TRB mine.

Outlook

India's iron ore production is expected to maintain healthy growth of 15% through the remainder of CY'26 to around 335-340 mnt. Merchant miners will remain the principal source of additional supply. Both NMDC and OMC are likely to sustain double-digit production growth as capacity expansions and operational improvements continue. Lloyds will also ramp up output, though the percentage growth may moderate slightly due to a higher base in the second half of the year.

Additionally, rising steel demand and mill capacity utilisation will encourage integrated steelmakers to increase output, though unfavourable mining economics may keep growth on the slower side. JSW Steel's operationalisation of Netrabandha

mine will also likely boost its output in the coming months. Notably, despite higher domestic output, iron ore imports rose 33% y-o-y to 4.95 mnt amid shortages of high-grade ore, logistical bottlenecks, and competitive pricing. This indicates that supply issues persist despite higher output.

The comparative underperformance of the captive miners compared with the PSU merchant miners is due to rising costs of iron ore mining, especially from the auctioned leases. From inordinate delays in operationalisation of leases to mine surrenders and declining dispatches of ore, particularly high-grade ore to artificially suppress the ASP, higher costs have impacted mining, with many sources in the industry attributing it to double calculation of royalty.

However, the recent SC verdict of including royalty, DMF and NMET in ASP has restored the status quo and no immediate relief from rising cost pressure is in sight.

Source: BigMint Bureau, 15 July 2026

Performance of Indian Steel Majors in Q1 FY2026-27

Company	Revenue from Operations (₹ Cr)	EBITDA (₹ Cr)	PAT (₹ Cr)	Production (MT)	Sales / Deliveries (MT)	EBITDA Margin	PAT Margin	EBITDA / tonne (₹/t)
Tata Steel	36897	9409	4536	5.460	5.170	25.5%	12.3%	18,198
JSW Steel	35539	6607	2826	5.180	5.240	18.6%	8.0%	12,609
Jindal Steel	15292	2227	1086	2.400	2.230	14.6%	7.1%	9,987
SAIL	26246	4356	1636	4.757	4.163	16.6%	6.2%	10,464
AMNS India	13800	1620	~750	1.950	1.930	11.7%	5.4%	8,390
Jindal Stainless	11279	1329	769	0.581	0.581	11.8%	6.8%	22,871
TSL remains the leader in Revenue, Ebitda, Profit due to its Products & Mines, JSW is leading in Sales Volumes								

India's Steel Exports in H1 CY2026

India's steel exports rise nearly 30% y-o-y in Jan-Jun'26 as alternative markets offset lower shipments to EU. India's steel exports increased 27% year-on-year (y-o-y) to 4.63 million tonnes (mnt) during H1 CY'26, compared with 3.64 mnt a year earlier, as higher shipments to Vietnam, the UK and the UAE more than offset weaker exports to the European Union (EU). Exports to the EU declined to 1.01 mnt from 1.26 mnt, while Vietnam emerged as one of India's fastest-growing export destinations.



India's Steel Export in H1 CY 2026

Source: BigMint

Most Valuable Steel Companies as per Market Capitalization

