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COUNTRY PROFILE – INDIA¹

2023 STEEL POLICY SCORECARD

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The major growth market for both green and dirty steel capacity

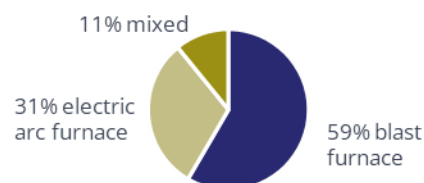
A major current producer, with growing domestic demand, India is central to turning the dial on global steel emissions. This is a challenging task in an economy with restricted fiscal space and a complex steel production landscape. India is sending some positive signals, from potential targets for reducing steel emissions to a green steel definition task force and a growing green steel production pipeline; yet lots remains to be done to see a faster transition of India's steel sector.

Country profile: India

Production capacity



Production methods



Source: Global Energy Monitor, 2023, 2023 Pedal to the metal



¹ This document supplements the main **2023 Steel Policy Scorecard report: Raising ambition on steel decarbonisation**.



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India's steel decarbonisation challenge is massive. Not only does its diverse domestic production landscape make local policy responses difficult; financial capacity is also lacking. While India is making moves in important policy spaces, from steel scrap policy to great ambition on green hydrogen, this must go hand in hand with active international support – from transition finance to facilitating a domestic buyers club with global companies.

Priority recommendations for Indian steel policy

- > Keep up the momentum and leadership created through the Indian G20 Presidency in 2023 in the space of circular economy and steel, by building on and increasing the ambition of existing relevant policies such as the Steel Scrap Policy.
- > Make strong calls for international climate finance and technology cooperation to develop small-scale green primary steel production technology (under 1,000 tons per annum capacity).²
- > Ensure regulators and federal- and state-level governments work together to create a predictable policy environment to maximise India's potential for PPA market growth, while addressing local energy distributors' concerns.

Shifting growing, coal-dominated production with limited financial resources

India is currently the world's second largest steel producer. With rapid urbanisation and infrastructure needs, steel consumption is set to increase from 94 Mt in 2020 to 489 Mt in 2050.³ The government has explicitly set the target to increase steel production to 300 Mt by 2030, more than twice its current production capacity.⁴ The current production landscape relies heavily on coal-based primary production, which accounts for 59% of total production, and 31% secondary scrap-based EAF production.⁵

India recently surpassed China as the top developer of coal-based steelmaking capacity; it has plans to build out an additional 153 Mtpa of BF-BOF capacity by 2030, 40% of global BF-BOF capacity under development.⁶ This buildout could

² DIW Berlin & TERI, 2023, **Financing Decarbonization of the Secondary Steel Sector in India: Towards an Enabling Environment**

³ BloombergNEF, 2021, **New Energy Outlook 2021**

⁴ PWC, 2015, **Steel in 2025: quo vadis?**

⁵ Calculated from Appendix C in Global Energy Monitor, 2023, **Pedal to the Metal 2023** (noting that the discrepancy between coal-based and scrap-based production is the mixed production process capacity)

⁶ Global Energy Monitor, 2023, **Pedal to the Metal 2023**



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result in quadrupling India's steel sector emissions by 2050.⁷ The key challenge for India will be to reconcile the sector's expansion with long-term emissions reduction targets.

India's fragmented steel production landscape, presents a challenge for steel decarbonisation.⁸ It is made up of large-scale production facilities, as well as a large number of small and medium-sized mills.⁹ With both large, global players like Tata Steel, and many small, solely India-based, companies, there is differential in-country capacity to transition and to respond to higher carbon-intensity standards set under the EU-CBAM. This makes for an uneven in-country playing field and makes domestic policy responses more challenging.

The many smaller mills, with below 1,000 tons per annum capacity, will require near-zero emissions technology to be developed that is specifically suited to small-scale primary production facilities. Moreover, numerous smaller sites could complicate the roll-out and distribution of clean energy supply, such as green hydrogen. The small and medium-sized facilities employ a large number of informal workers; this suggests that careful consideration needs to be taken of the implications of changes for workers and jobs.

India's GDP per capita is 1/20th of that of Germany and 1/14th of South Korea's.¹⁰ Its capacity to financially support the transition and reskill a formal and informal workforce is in a very different league to that of the G7 nations we assess in the Steel Scorecard. It presents a substantial transition barrier.

Indian steel decarbonisation is thus complex, even more so when seen in the context of its cumulative (historical) emissions and current per capita steel consumption – both relatively low.¹¹ Countries with high steel consumption, larger fiscal space and a greater share of historical emissions, must play a role in supporting the Indian transition. They can do so through offering transition finance and partnerships for technology and skills transfer. However, it is also essential that India shows clear ambition to rapidly decarbonise, putting in place

⁷ Climate Group SteelZero, 2023, **India Net Zero Steel Demand Outlook Report**

⁸ Mallet and Pal, 2022, **Green Transformation in the Iron and Steel Industry in India**

⁹ Global Energy Monitor, **Global Steel Plant Tracker**, accessed December 2023

¹⁰ The World Bank, **GDP per capita (current US\$); World Bank National Accounts data**, accessed November 2023

¹¹ Per person steel consumption in India is 76 kg, compared to 666 kg in China and 426 kg in Germany (World Steel Association, 2022, **World Steel in Figures 2022**) and India is only responsible for 3% of total global CO₂ emissions (Our World in Data, October 2019, **Who has contributed most to global CO₂ emissions?**)



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the right policy signals and enablers. This could be a catalyst for increasingly carbon-conscious foreign direct investment, increasing the global competitiveness of Indian steel production. It could also put pressure on historical high emitters to step up their own efforts.

On the cusp of clearer and more ambitious steel policy

The Indian government has not yet set a specific target for reducing emissions from the steel sector. However, there is hope that the Vision 2047 document, prepared by the Ministry of Steel but not yet publicly available, will signal increased ambition and a clear policy direction. The Minister of Civil Aviation and Steel recently called for the sector to reduce emissions by 30–40% by 2030. This is very encouraging and will hopefully be enshrined in the Vision 2047.¹²

Another promising move is the establishment in April 2023 of 13 different steel task forces, working across four key mission components – including the development of a green steel definition. The intention is there, and this now needs to be translated into clear and ambitious standards and definitions.

Can early signs of leadership and ambition on circularity live up to their promise?

India's 2023 G20 Presidency saw progress on circular economy, through the launch of the Resource Efficiency Circular Economy Industry Coalition; it also saw the release of the technical paper "Knowledge Exchange on Circular Economy in Steel Industry".¹³ The Scrap Metal Committee and Steel Scrap Recycling Policy aim to create a framework to facilitate and promote establishment of metal scrapping centers across India.¹⁴ All these indicate Indian ambition and leadership on steel circularity and material efficiency.

India also showed early signs of leadership in public procurement, taking on the co-lead of the IDDI when established in 2021. However, there has been no visible movement on adopting IDDI's public procurement pledges. Nor have we seen any other progress towards setting green steel targets or requirements in public procurement.

¹² Ministry of Steel, 23 August 2022, **Union Minister of Steel and Union Minister of Mines inaugurate two-day conference on "Indian minerals & metals industry: Transition towards 2030 & vision 2047"**

¹³ G20, July 2023, **Knowledge Exchange on Circular Economy in Steel Industry**

¹⁴ Indian Ministry of Steel, 16 March 2022, **Steel scrap recycling policy**



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Room to bridge the green steel premium with (international) public policy

India's Perform, Achieve, Trade (PAT) scheme functions much like an emissions trading system. And with the 2022 amendments to the Energy Conservation Act there is now scope to also introduce compulsory carbon trading¹⁵ The calculus for introducing carbon pricing has recently changed in its favour due to the EU's introduction of CBAM.¹⁶

India is short on funding for capital and operational expenditure for decarbonised steelmaking. However, substantial funding is going into R&D for hydrogen-based steelmaking, through the National Green Hydrogen Mission.¹⁷

Great ambition on green hydrogen

India's ambitious green hydrogen target, and clear mentions of green hydrogen for steel, are further promising signs. Two pilot plants exploring the use of green hydrogen in the DRI process are currently under construction, while not yet up and running. India also has a relatively high ambition when it comes to adding renewable capacity (from about 177 GW by mid-2023 to about 596 GW by March 2032¹⁸), but still has a long way to go to achieve the G20 2040 power system carbon neutrality goal; the overall share of electricity produced from clean energy sources is still oscillating around 20%.¹⁹

Both its steel and hydrogen strategies mention a build-out of clean electricity infrastructure to meet the steel sector's growing needs. Indeed, building out adequate grid infrastructure is the next key step in India's clean power transition. Current transmission capacity still limits the ability to transport renewable electricity from where it is generated to meet industrial demand in other regions. Renewable capacity procured through corporate PPAs is rapidly growing due to green open access rules introduced in 2022;²⁰ but there is opposition from companies distributing electricity (discoms), which is a state-level competence.²¹

¹⁵ Indian Ministry of Power, 2022, **Energy Conservation (Amendment) Act 2022**

¹⁶ Reuters, 2 November 2023, **India weighs local tax options to avoid EU carbon levy – minister**

¹⁷ Ministry of New and Renewable Energy, 2023, **National Green Hydrogen Mission**

¹⁸ Ministry of Power, Central Electricity Authority, March 2023, **National Electricity Plan**

¹⁹ Ember, last updated 2023, **G20: Members include both leaders and laggards in clean power**

²⁰ Indian Ministry of Power, 2022, **Indian Ministry of Power notifies `Green Open Access` Rules to accelerate ambitious renewable energy programmes**

²¹ Institute for Energy Economics and Financial Analysis, 2023, **State-level issues prevent India's green open access market from reaching its full potential**



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About E3G

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