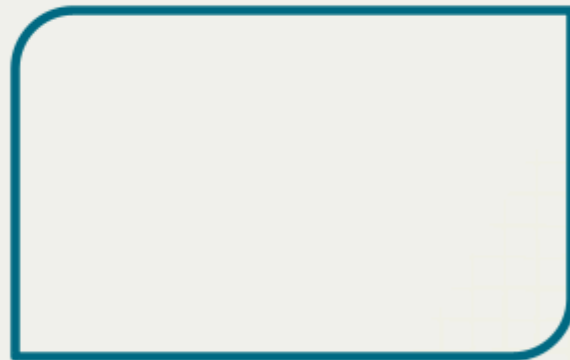
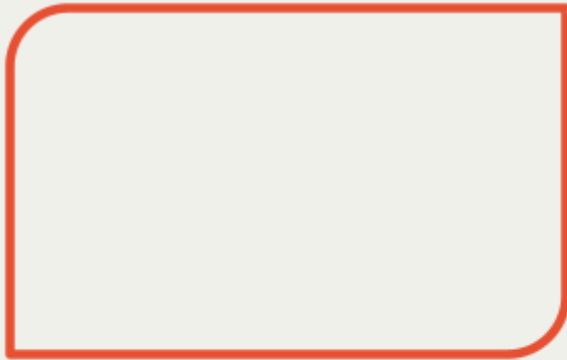




Global Energy Monitor

# Pedal to the Metal 2026

The iron and steel industry's coal lock-in crisis



## Global Energy Monitor

Global Energy Monitor (GEM) develops and shares information in support of the worldwide movement for clean energy. By studying the evolving international energy landscape and creating databases, reports, and interactive tools that enhance understanding, GEM seeks to build an open guide to the world's energy system. Follow us at [www.globalenergymonitor.org](http://www.globalenergymonitor.org), Twitter/X [@GlobalEnergyMon](https://twitter.com/GlobalEnergyMon), and Bluesky [@globalenergymon.bsky.social](https://bsky.app/profile/globalenergymon.bsky.social).

## About the Global Iron and Steel Tracker

The Global Iron and Steel Tracker (GIST) provides information on global crude iron and steel production plants, and includes every plant currently operating at a capacity of 0.5 million tonnes per year (mtpa) or more of crude iron or steel. The GIST also includes all plants meeting the 0.5 mtpa threshold that have been proposed or are under construction since 2017, or retired or mothballed since 2020. The GIST includes unit-level data on the main iron and steel production units at each plant. As of 2026, this includes EAF, BOF, IF, and open hearth furnace (OHF) steelmaking units, and BF and DRI iron units.

## About the Global Iron Ore Mines Tracker

The Global Iron Ore Mines Tracker (GIOMT) provides information on global iron ore mines and includes all operating, proposed, shelved, retired, or mothballed mines since 2023. The GIOMT provides asset-level data on ownership structure, development stage, and operating status, annual production since 2022, and design capacity for each mine. The data were released in November 2024, followed by a limited update for new and retired assets in August 2025.

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For additional data on proposed and existing steel plants see the [GIST Summary Data](#). For links to more reports based on this data, see [Reports & Briefings](#).

See the [GIST Download Data](#) page to obtain primary data from the Global Iron and Steel Tracker.

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# Pedal to the Metal 2026

The iron and steel industry's coal lock-in crisis

## Introduction

Continued investment in coal-based capacity and underinvestment in green hydrogen threaten net-zero targets in the steel industry. Now more than ever, it is crucial to disrupt emissions-intensive blast furnace developments and redirect resources to iron and steelmaking technologies that align with net-zero goals.

With 2030 decarbonization deadlines approaching, the global iron and steel industry is running out of time to shift away from coal-based production methods. Positive

developments such as a sustained increase in EAF capacity and a surge in green DRI announcements are encouraging signs that the transition is underway. Global steel decarbonization is slowly progressing, with EAF capacity increasing its share of global operating capacity by 1% in the past year from 33% to 34%, up from [31%](#) in 2022. Yet these advances remain overshadowed by blast furnace expansion, fossil-based DRI growth, and reinvestment in legacy coal assets.

Since 2021, Global Energy Monitor (GEM) has published annual datasets and reports on the global iron and steel sector with the aim of offering a comprehensive overview of the existing operating fleet as well as capacity in the development pipeline. This year's report features data from the 2026 Global Iron and Steel Tracker (GIST) and the 2025 Global Iron Ore Mines Tracker (GIOMT). The GIST tracks 1,293 iron and steel plants in 91 countries, covering 2,216 million tonnes per annum (mtpa) of operating and 846 mtpa of developing steelmaking capacity, as well as 1,674 mtpa of operating and 636 mtpa of

developing ironmaking capacity. The GIOMT covers 673 operating mines and 164 proposed mines across 74 countries.

Data from the GIST include plant-level details as well as information on all iron and steelmaking units at each plant, including expanded data on DRI and a newly added furnace unit type, induction furnaces (IFs). The 2026 Pedal to the Metal report looks at iron and steelmaking from the beginning of the supply chain and explores the latest on the industry's progress toward net-zero goals.

## Executive summary

- **The persistence of coal-based steelmaking puts decarbonization at risk:** There is 319 mtpa of blast furnace (BF) capacity under development.<sup>1</sup> By 2030, net BF capacity additions are projected at 73 mtpa, and by 2035 net additions will be 88 mtpa with an additional 80 mtpa of BF capacity planned for relining.
- **Globally, electric arc furnace (EAF) momentum continues toward greening the steel sector, but gains remain incremental:** EAF technology now represents 34% (727 mtpa) of the operating fleet, up from 31% in 2022. EAF represents 50% of developing steel capacity and 71% of projects that have already broken ground.
- **India's steelmaking plans offer a major opportunity to redirect high-emissions pathways:** India is developing over 60% of upcoming BF-BOF capacity globally. Around 93% of the country's developing ironmaking capacity will use coal-based technology,<sup>2</sup> but just 5% has actually broken ground — leaving a significant intervention opportunity.
- **China's shift toward EAF is gradual and constrained by coal-based legacy assets:** 39% of developing capacity in China will rely on EAF technology, compared to 17% of existing capacity. However, its operating fleet is so vast that this shift will have a limited near-term impact. Around 94% of China's massive BF capacity has no plan for retirement, and China remains the second-largest net developer of BF capacity after India.
- **Direct reduced iron (DRI) capacity is set for rapid global expansion:** Global DRI capacity could increase 141% if all developments proceed. By 2030, DRI capacity could increase 69% to 284 mtpa, and by 2035, it could grow 76% to 296 mtpa, representing 16% of overall ironmaking capacity. However, approximately 83% of operating DRIs with known reductants use some type of gas, and 17% use coal.
- **Green hydrogen remains a critical bottleneck:** While green H<sub>2</sub>-based DRI is key to the sector's decarbonization plan, just 2% (4 mtpa) of operating DRI capacity uses green hydrogen as a primary reductant. However, 19% of planned capacity with a known reductant will use hydrogen upon startup, creating an opportunity for significant decarbonization through rapid green hydrogen development and implementation.

---

<sup>1</sup> Capacity with an “announced” or “construction” status.

<sup>2</sup> Around 84% of Indian ironmaking developments will use BF technology and 16% will use direct reduced iron (DRI). Of that DRI, 58% is expected to use coal as a reductant.

## Acronyms

|          |   |
|----------|---|
| BF       | blast furnace   |
| BOF      | basic oxygen furnace  |
| CCS/CCUS | carbon capture and storage/carbon capture, utilization, and storage |
| DRI      | direct reduced iron   |
| EAF      | electric arc furnace  |
| GEM      | Global Energy Monitor   |
| GIOMT    | Global Iron Ore Mines Tracker                                       |
| GIST     | Global Iron and Steel Tracker                                       |
| IF       | induction furnace   |
| Mt       | million metric tonnes   |
| mtpa     | million tonnes per annum  |
| OHF      | open hearth furnace   |
| ttpa     | thousand tonnes per annum   |

## Background

### Fundamentals of iron and steelmaking

Steel production can be broadly categorized into two methods: primary production, which uses iron ore, and secondary production, which relies on scrap steel. Secondary steelmaking typically uses an EAF to melt scrap with electric arcs. IFs undergo a similar process using electromagnetic induction, and are often used for smaller-scale production.

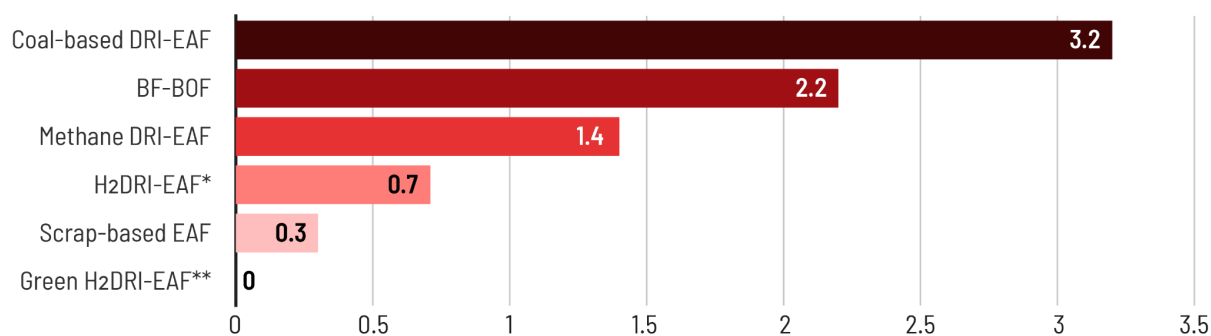
Primary steelmaking involves an initial ironmaking step, most often using a BF to process iron ore and coking coal into pig iron. Ironmaking can also use a DRI plant to produce sponge iron from iron ore and a reducing gas, such as methane-based syngas or green hydrogen. Both pig and sponge iron are then processed into steel using steelmaking units, such as basic oxygen furnaces (BOFs) or EAFs. The most common steelmaking routes are BF-BOF, scrap-fed EAF, and DRI-EAF production, but steelmakers can employ many combinations of iron and steelmaking units. Please see [Appendix A](#) for an overview of the main production processes and visit GEM's [2021 Pedal to the Metal](#) report for an in-depth description.

### Iron and steel sector emissions

Iron and steel production is central to global decarbonization: The industry is [responsible](#) for around 11% of all CO<sub>2</sub> emissions and 8% of all greenhouse gas emissions worldwide. Around [75%](#) of these emissions come [directly from](#) production, with the remainder being [indirect](#) emissions through upstream or downstream processes like electricity generation.

## Coal-based steelmaking production routes are the most emissions-intensive

Emissions intensities of main steelmaking routes, in tonnes of CO<sub>2</sub> equivalent per tonne of steel



Source: IEA Iron and Steel Technology Roadmap

\*This estimate uses an electricity CO<sub>2</sub> intensity of 144 gCO<sub>2</sub> / kWh, which is the global average CO<sub>2</sub> intensity assumed under the IEA's Sustainable Development Scenario in 2035.

\*\*This near-zero estimate assumes electricity generated by renewables.

gem

Figure 1

Approximately [88%](#) of all steel sector emissions are generated through BF-BOF production. BF production relies on coking coal as an inherent element of ironmaking, making it impossible to fully decarbonize. As a result, BF production is the biggest lever for reducing emissions in the sector. While the operation of a BOF is not emissions-intensive relative to the full production process, nearly all of them<sup>3</sup> use pig iron from BFs as their primary feedstock, meaning BOFs can be used as a proxy for coal-based production when looking only at the steelmaking step.

## How to decarbonize the industry

Today, approximately [90%](#) of ironmaking uses a blast furnace. The most impactful way to move the industry toward net-zero emissions is to phase out the operating BF fleet, to stop developments of new BF capacity, and to reconsider investments that maintain existing BFs through relining.

Scrap-based steelmaking and primary steelmaking using DRI produced with [green hydrogen](#) are the most commercially available methods for making [net-zero emissions steel](#). Other technologies such as [molten oxide electrolysis](#) (MOE) and [hydrogen-based fluidised bed reactor](#) technology have all shown promising results as additional methods to eliminate coal from the process.

<sup>3</sup> Out of 480 plants with BOF units in the GIST, 465 (97%) also have one or more confirmed BF units.

The pivot toward DRI-based ironmaking heightens a supply-side constraint: DRI requires high-grade ore with iron content above 67%, which represents only around [4%](#) of global iron ore supply. This mismatch is driving exploration into [beneficiation](#) and alternative process routes like [DRI-smelt-BOF](#) and MOE that can work with lower-grade ores. Further, without solid plans to use fossil-free reductants, DRI production poses the threat of gas lock-in for units currently or initially using fossil gas.

The shift towards DRI-based ironmaking also introduces a new dynamic to the global steel sector with the opportunity to [decouple](#) ironmaking from steelmaking. The cooled form of DRI, called hot briquetted iron (HBI), is easy to transport compared to the iron produced in BFs. Thus, green iron and green steel production does not necessarily need to be co-located like BF-BOF production.

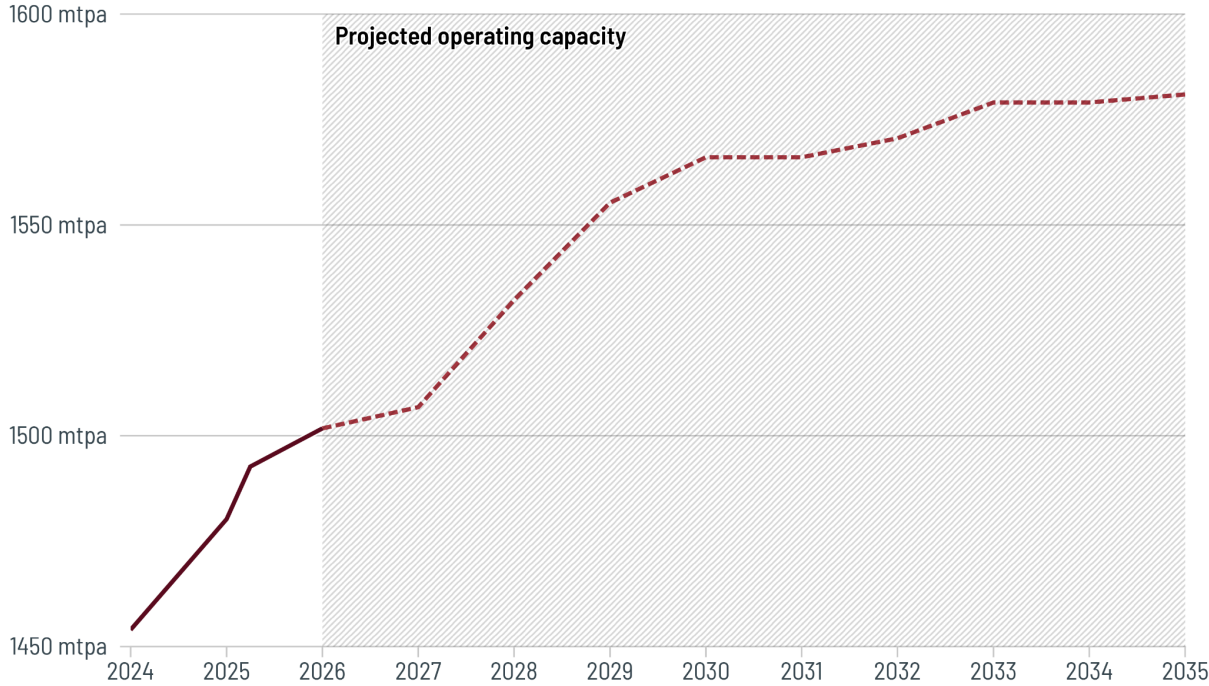
The iron and steel industries are also exploring other decarbonization methods, such as carbon capture storage (CCS) and carbon capture, utilization, and storage (CCUS), though advancements have been slow and only capture a [small portion](#) of emissions from steelmaking. Further investments in mitigating emissions from coal-based technology also threaten to prolong the life of these assets.

# Coal-based investments hold up the green steel transition

Because of the substantial emissions generated through iron and steel production, the industry’s transition toward net-zero-aligned steel technologies is crucial and urgent. However, more emissions-intensive, coal-based capacity is under development than has a retirement plan globally. Currently there is 319 mtpa of BF capacity that has been announced or is under construction. Although 141 mtpa of currently operating BF capacity has announced retirement plans (less than 10% of the operating fleet), there will be a net gain of 178 mtpa of BF capacity if all plans go into effect.<sup>4</sup>

## Blast furnace capacity expected to rise, rather than fall, in the next decade

Actual and projected operating blast furnace capacity to 2035



Source: Global Energy Monitor, Global Iron and Steel Tracker, March 2026

Notes: This projection includes capacity that is under development and excludes capacity that has announced retirement plans with effective dates in each year. Developments and retirements with unknown dates are excluded.



Figure 2

<sup>4</sup> This includes all developing/retiring capacity, regardless of whether there is a known start or retirement date.

By 2030, 53 mtpa of BF capacity is set to retire, but 126 mtpa of new capacity is expected to come into operation. By 2035, the fleet will continue to grow with net additions of 88 mtpa. Further, future BF developments with a confirmed start date have a higher chance of going into operation than retirements announced for the same period. In 2025, 33 mtpa of a planned 32 mtpa of BF capacity with a planned start date went into operation (104%).<sup>5</sup> Meanwhile, 34 mtpa (87%) of 39 mtpa of planned BF retirements in that period was carried out.

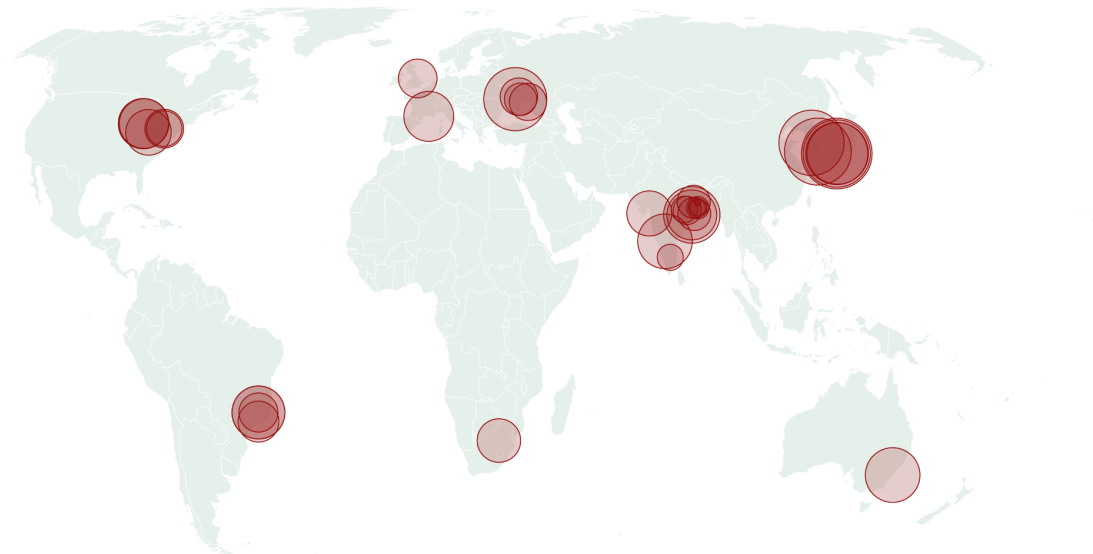
## Blast furnace relining: the overlooked lock-in signal

In addition to brand new capacity buildouts, 80 mtpa of existing BF capacity has a planned or ongoing relining which signals the intention to operate these units long term.

### Over 80 mtpa of blast furnace capacity has announced relining plans that would lock in coal-based capacity

Blast furnaces with a planned or in-progress relining scheduled, by furnace capacity

Capacity (ttpa) 1250  5000 



Source: Global Energy Monitor, Global Iron and Steel Tracker, March 2026

Figure 3

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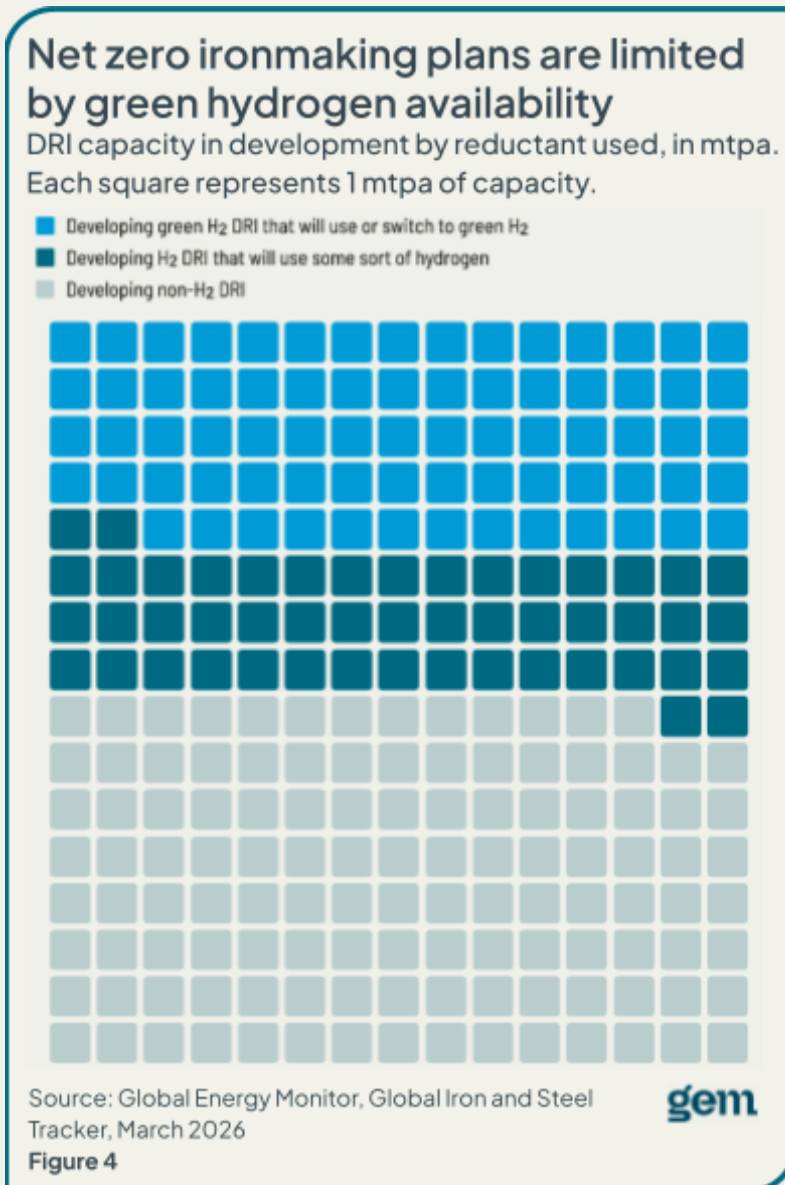
Beyond announced relining events, the average time since the latest relining or initial startup of BFs globally is 8.4 years. With an average global campaign of 15–20 years, this means the next decade is critical for BF investment intervention as the world approaches the end of these campaigns.

<sup>5</sup> More BF capacity than anticipated went into operation in 2025, largely due to capacity starting operations earlier or later than announced.

## The green hydrogen challenge

Green hydrogen-based DRI (green H<sub>2</sub>-DRI) production<sup>6</sup> offers a promising opportunity within steel decarbonization, but progress toward that goal has been limited. DRI production is currently almost entirely fossil-based (98%). Just 2% (4 mtpa) of operating DRI capacity uses green hydrogen as a primary reductant. Around 36 mtpa (19%) of developing DRI capacity plans to use hydrogen as an initial reductant, and most of that is intended to be green hydrogen. Additionally, 26 mtpa (15%) of operating DRI capacity has announced plans to switch to hydrogen use in the future. However, these plans will not become reality without a major shift in the DRI fleet and available reductants.

While green H<sub>2</sub>-DRI is no longer merely theoretical, the challenge now is scaling up production rapidly. [Policy gaps, infrastructure limitations, and renewable electricity unavailability](#) remain constraints on green hydrogen production. Without increased commitment from steelmakers, policy developments to support green hydrogen production, and demand-side incentives for producers, green hydrogen production has the potential to stall the industry's net-zero progress.



<sup>6</sup> Green hydrogen is produced via electrolysis powered by renewable electricity.

# Looking further upstream

## Iron ore mining background

Iron ore is the foundation of primary steel production and will remain central to the sector. GEM's Global Iron Ore Mines Tracker (GIOMT) covers existing, developing, and potential capacity globally. [Nearly all](#) mined iron ore goes into steel production, meaning iron ore production holds meaningful power over the direction of the entire industry.

By directing ore toward green ironmaking projects and strategically aligning iron ore mining and ironmaking sites, producers have the opportunity to accelerate the net zero transition from the start of the supply chain.

However, mining iron ore also carries significant environmental and social costs. [Open-pit mining](#) is the dominant extraction method and is known to cause [environmental damage](#) such as land degradation, water pollution, and biodiversity loss. These mines are also frequently [developed](#) near marginalized communities whose health, land, water, and cultural heritage are threatened. As in every part of the process, iron ore mining must be approached with care for the surrounding land and communities.

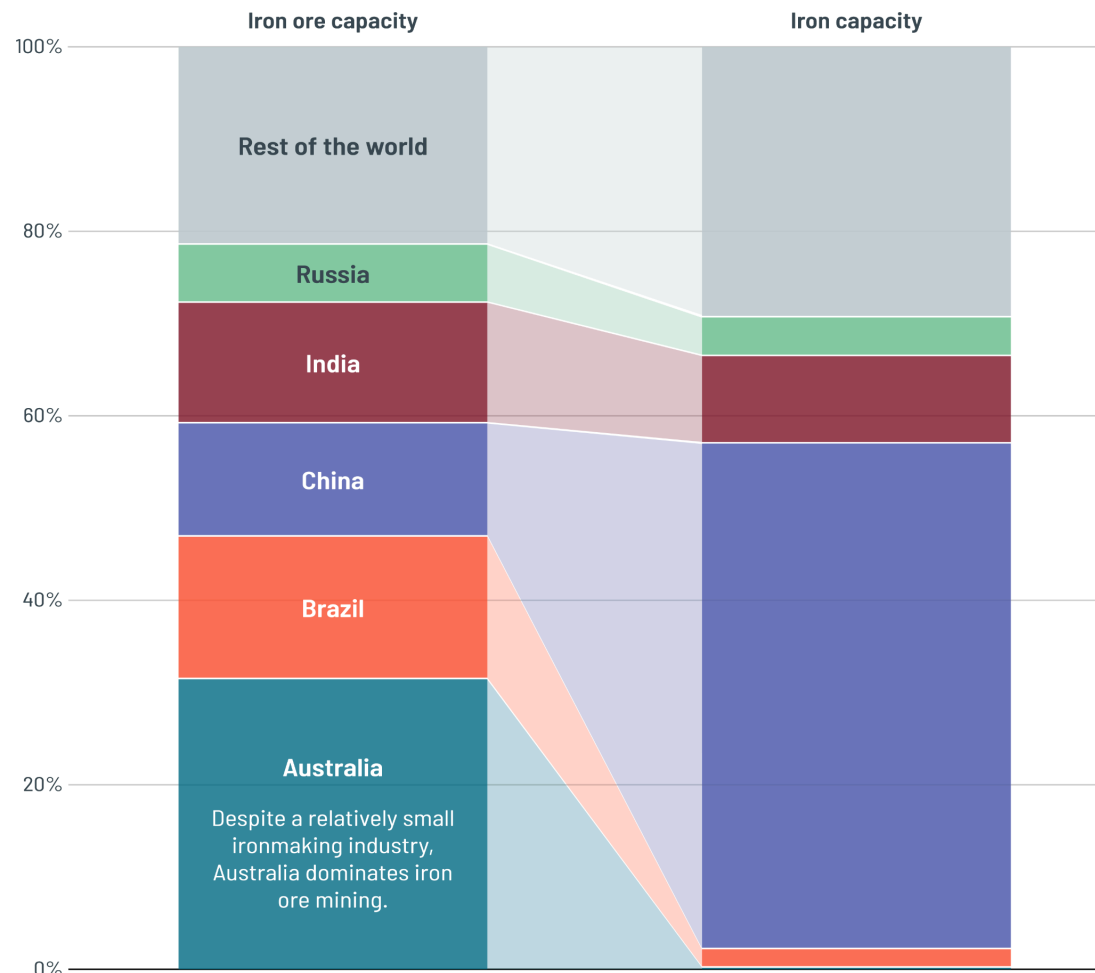


## The Global Iron Ore Mines Tracker

Australia leads in operating mine capacity with 1,208 mtpa (32% of the global total), followed by Brazil with 592 mtpa (15%), India with 501 mtpa (13%), and China with 470 mtpa (12%). Australia also leads in capacity under development with 179 mtpa (26% of global total), though its share has declined from 32% last year. China (124 mtpa, 18%), Guinea (120 mtpa, 17%), and Cameroon (64 mtpa, 9%) are the next largest developers, with African countries representing an increasing share of mining capacity in the pipeline.

### Geographic mismatches between iron and iron ore production indicates a green iron opportunity for iron ore exporters

Share of global operating capacity by country



Source: Global Energy Monitor, Global Iron and Steel Tracker, March 2026 and Global Iron Ore Mines Tracker, August 2025

Figure 5

Though Australia and Brazil lead in iron ore mining, they do not have equivalent capacity for iron and steelmaking. Australia and Brazil consume 0.5% and 10%, respectively, of the iron ore they mine. The majority of iron ore produced in both lead countries is exported to steelmakers elsewhere, particularly to China. China mines 259 mtpa of iron ore domestically, covering just 19% of its own consumption, but consumes 59% of all iron ore used in ironmaking worldwide. This structural dependency on imported iron ore makes China, and the entire industry, sensitive to shifts in Australian and Brazilian mining supply.

## Metallurgical coal

Metallurgical coal, or met coal, is the same material as thermal coal and differs only in the [end use](#) of the product. While thermal coal is generally used for power generation, [met coal](#) is used for making iron in a BF as “coking coal” — coal fed through coke ovens before being used for ironmaking — or “non-coking coal” used in pulverized coal injection. Met coal combustion is no less emissions-intensive than “other” coal combustion, and can in fact produce [more](#) greenhouse gases.

Data on metallurgical coal consumption look slightly different.<sup>7</sup> China is the largest producer of met coal with 970 mtpa (63% of global capacity). Australia is runner-up with 234 mtpa (15%), followed by Russia with 117 mtpa (8%) and the United States with 49 mtpa (3%). While China relies heavily on imported iron ore for its steel production, it consumes around 68% of the met coal it mines, making it far more coal-independent. Russia and the United States are similarly self-reliant on met coal capacity, consuming 34% and 33% of the met coal mined, respectively. However, Australia consumes less than 1% of the met coal it mines, again giving it significant power over external met coal consumption through its heavy exports.

India’s consumption patterns are also noteworthy, given its [massive](#) iron and steel capacity and developments underway. India is fairly independent in iron ore capacity as it consumes around 77% of the 287 mtpa of iron ore it mines. However, India consumes nearly three times the 24 mtpa of met coal it mines, making it dependent on coal imports to sustain its coal-based ironmaking capacity. This presents another major challenge for India’s major coal-based developments — without a change in development plans, they are on course to further entrench reliance on met coal imports in the decades to come, presenting a significant threat to the independence of their steel industry. However, this also gives India an opportunity to pivot towards green hydrogen investments and maximize scrap-based EAF utilization.

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<sup>7</sup> Global Energy Monitor, Production & Consumption of Met Coal & Iron Ore by Steel Industry, November 2025.

# Global state of iron and steel capacity

## Global steelmaking operating capacity

In 2026, global steelmaking operating capacity remained steady overall at 2,216 mtpa, a modest 17 mtpa increase from 2025. EAF capacity expanded 28 mtpa while BOF capacity shrank nearly 21 mtpa in operating capacity, signaling a small shift in steelmaking technologies. IFs and other unknown steelmaking technologies together added 10 mtpa to operating capacity this year.

BOF continues to dominate global capacity, constituting 66% (1,441 mtpa) with 34% (727 mtpa) of capacity using EAF technology.<sup>8</sup> Coal-based steelmaking technology still represents the largest share of operating global steel capacity. While BOF capacity has only increased at an annual average growth rate of 2.6%<sup>9</sup> per year over the past 5 years, any continued growth remains a concern from a decarbonization perspective. In contrast, EAF capacity is growing at a higher rate of 12.8% per year.

At the country level, operating capacity remains highly concentrated in a few key countries. China accounts for 48% (1,073 mtpa) of global steelmaking capacity, far exceeding other top operators India (6%, 140 mtpa), the U.S. (5%, 111 mtpa) and Japan (5%, 106 mtpa). China's total operating capacity has approximately evened out over the past five years. Since 2021, there has been a notable shift in China's capacity mix, with the EAF share increasing substantially from 5% to 17%, while BOF share decreased by 12% from 95%. For BOF operating capacity, China alone represents 61% (886 mtpa) of BOF capacity, followed by India (6%, 86 mtpa) and Japan (5%, 77 mtpa).

**China alone accounts for nearly half of global steelmaking capacity, far exceeding any other major producer.**

In contrast, EAF operating capacity is more spread out geographically, although China still makes up the largest share of 26% (188 mtpa), an increase of 27 mtpa from last year. With the massive [buildout](#) for wind and solar power, China has the ability to improve the economic viability of lower-emissions EAF steelmaking further. The United States ranks as the second-largest EAF operator, though at less than half of China's share (11%, 82 mtpa), followed by Türkiye (6%, 43 mtpa) and Iran (6%, 41 mtpa).

<sup>8</sup> This breakdown excludes other and unknown steelmaking technologies, including IF and OHF capacity. When including all categories, the breakdown is: 65% BOF, 33% EAF, 1% IF, and 1% OHF/other steel.

<sup>9</sup> In 2021, BOF operating capacity was 1,266 mtpa, and EAF was 398 mtpa.

# China dominates global steelmaking capacity, with heavy reliance on coal-based technology

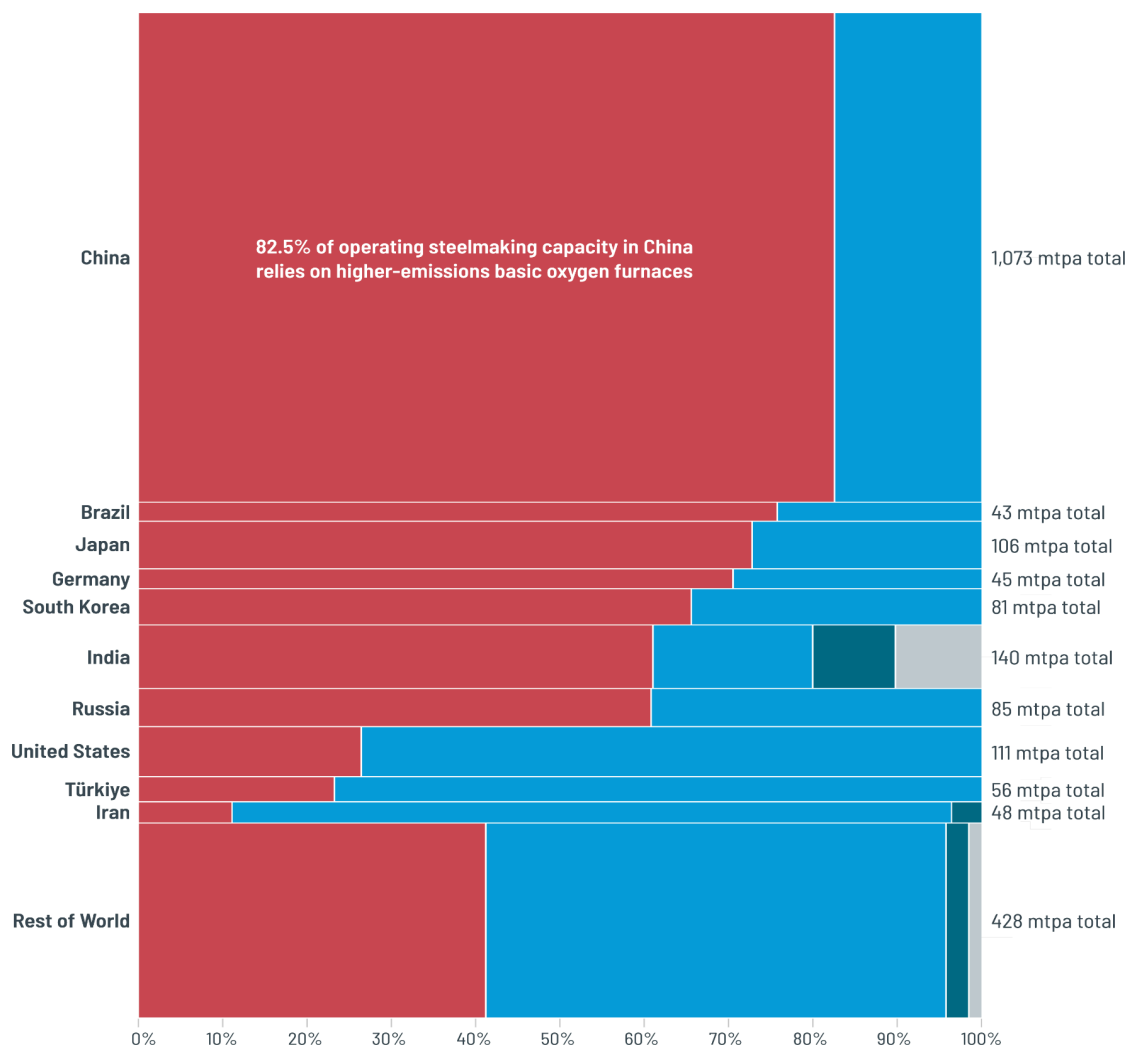
Proportion of operating steel capacity in mtpa by technology type

How to read this chart:

→ % of operating steel capacity by technology type

↓ height of bars = total operating steel capacity in million tonnes per year (mtpa)

- Higher-emissions basic oxygen furnace (BOF)
- Lower-emissions electric arc furnace (EAF)
- Induction furnace (IF)
- Other/unspecified



Source: Global Energy Monitor, Global Iron and Steel Tracker, March 2026

Figure 6



Countries with the lowest emissions intensities in steel production are those that depend heavily on EAFs, such as the United States, Türkiye, Italy, and Mexico. In comparison, India's, China's, and Brazil's industries have the highest emissions

intensities in the world, mainly due to their BF-BOF heavy production. India also relies heavily on coal-based DRI production, making its EAF and IF production more emissions-intensive than most.

## Global capacity utilization

Due to maintenance, repairs, and other shutdowns, actual production is always lower than installed capacity. Steel plants need to operate in the range of [80–90%](#) capacity utilization to remain profitable. In some cases, increasing production at underutilized, existing low emissions capacity is a low-cost step toward decarbonization goals. For instance, China currently has around 188 mtpa of operating EAF capacity, but produced less than [103 mtpa](#) in the most recent reporting year, resulting in a 55% capacity utilization rate (CUR) for EAFs in China. This means that the country has [significant room](#) to increase EAF output in the units that already exist.

In the rest of the world outside China, the average CUR for EAF is 85%. While this CUR is within the appropriate range, it may still be boosted to reach the levels of BOF production that have achieved an average CUR of 96% outside China.<sup>10</sup>

## Induction furnace steelmaking

As of 2026, the GIST tracks individual IF units at iron and steel plants in the dataset. IF technology only accounts for approximately 1% of operating steelmaking capacity (27 mtpa) in the GIST,<sup>11</sup> with half of that capacity in India (14 mtpa), 16% in Vietnam (4 mtpa), 8% in Bangladesh (2 mtpa), and 7% in Pakistan (2 mtpa).

Using feedstock data from the GIST, it is clear that very different inputs are used in IFs compared to EAFs. In EAF production, scrap makes up approximately 71% of EAF feedstocks while sponge iron makes up around 21%. For IF production, this breakdown is flipped: IF production uses only 19% scrap as feedstock on average, and 73% sponge iron. A key difference between EAF and IF feedstocks though is that much of the sponge iron used in IFs is generated using emissions-intensive coal-based rotary kilns (compared to gas-based DRI units). Therefore, while IFs have often been thought of as equivalent or even [lower emissions](#) compared to EAFs, these feedstock profiles indicate that IFs may have a much higher emissions profile when considering embodied emissions.

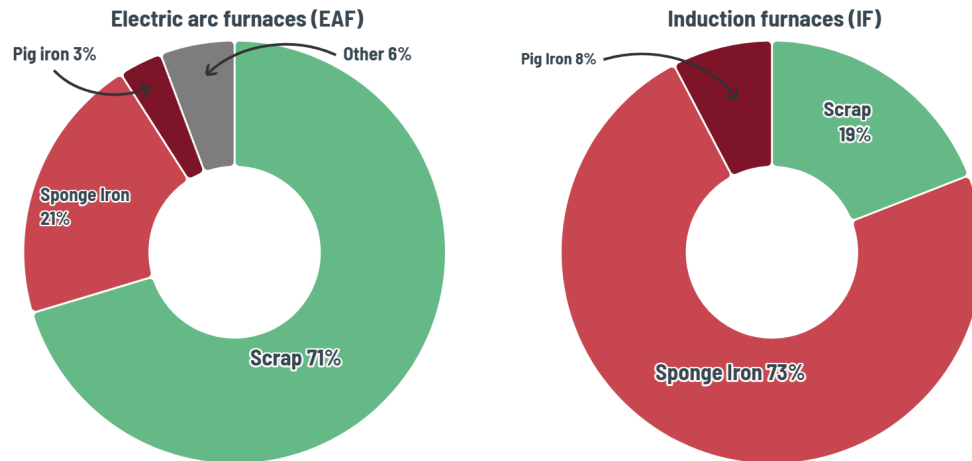
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<sup>10</sup> [Worldsteel](#) puts 2024 BOF production at 1,326 Mt and EAF production at 548 Mt. Comparing this to GEM's BOF and EAF operating capacities of 1,441 mtpa and 727 mtpa, the global CUR for BOF is 92% and for EAF 75%. China produced 791 Mt of BOF steel and 90 Mt of EAF steel in 2024; excluding China, the rest of the world is operating at a CUR of 96% for BOF and 85% for EAF.

<sup>11</sup> Because IFs are usually lower-capacity than other steelmaking technologies, many IF plants fall below the GIST's 500ttpa threshold for inclusion. Because of this, there is significant IF capacity unreported in the GIST.

## EAFs use primarily scrap while IFs use more sponge iron as feedstock

Share of feedstock by type



Source: Global Energy Monitor, Global Iron and Steel Tracker, March 2026

Figure 7

gem

## Global ironmaking capacity

In the past year, global ironmaking operating capacity increased by 29 mtpa to 1,674 mtpa. Of this addition, 12.5 mtpa (43%) came from BF capacity, while 13.5 mtpa (47%) was driven by DRI technology, and the remaining 3 mtpa (10%) attributed to other or unknown technologies. Notably, BF capacity additions have slowed, declining from 26 mtpa added operating BF capacity in 2024–2025 to 13.5 mtpa added in the past year, whereas DRI capacity additions have nearly doubled from 6 to 13 mtpa over the same period.

Over the past five years, the BF average annual growth rate was 2.4% per year while DRI production grew at an average rate of 15.3% per year.<sup>12</sup> However, the global iron operating capacity remains heavily dominated by coal-based BF technology since it accounts for 90% (1,493 mtpa) of total operating capacity, compared to 10% (169 mtpa) for DRI.

Ironmaking capacity is highly concentrated in Asia. China leads with 55% (918 mtpa) of global capacity, followed by India (9%, 159 mtpa), Japan (5%, 80 mtpa), and Russia (4%, 70 mtpa). These countries all operate predominately BFs, accounting for the majority of global BF capacity. Most notably, China operates 61% (911 mtpa) of global BF capacity.

In contrast, DRI capacity is more geographically diversified, though still led by a few key players. Iran is today's top DRI operator, holding 33% (56 mtpa), followed by India (22%, 37 mtpa). Egypt, Algeria, and Russia each account for approximately 5% of global DRI

<sup>12</sup> BF capacity in 2021 was 1,329 mtpa, and DRI was 83 mtpa.

capacity. Iran has seen notable growth, with its DRI capacity growing by 12 mtpa, a roughly 26% growth over the past year.

## Global ironmaking relies heavily on coal-based blast furnace technology, with much of this capacity in China

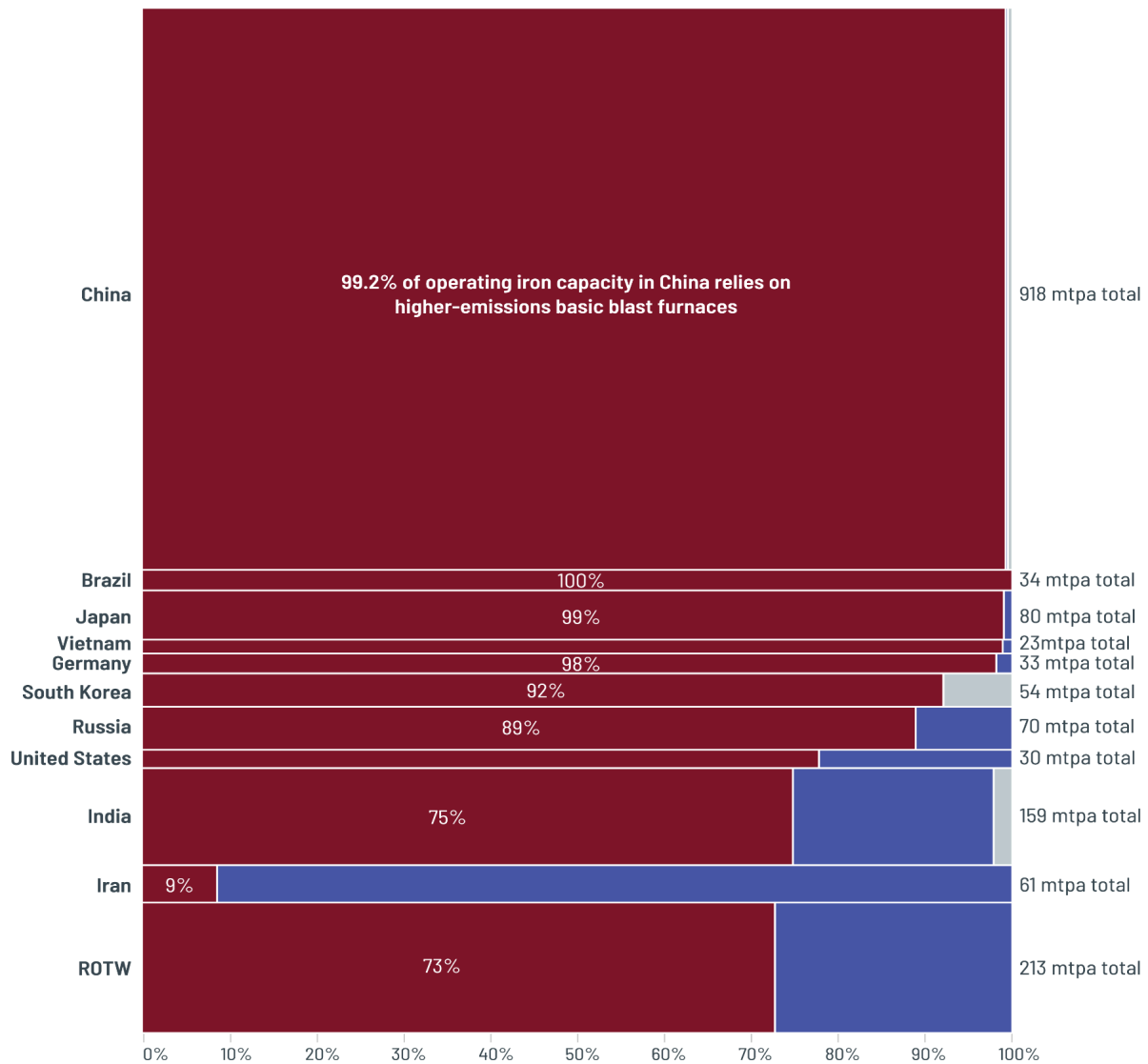
Proportion of operating iron capacity in mtpa by technology type

How to read this chart:

→ % of operating iron capacity by technology type

↓ height of bars = total operating iron capacity in million tonnes per year (mtpa)

- Blast furnace
- Direct reduced iron
- Other/unspecified



Source: Global Energy Monitor, Global Iron and Steel Tracker, March 2026

Figure 8

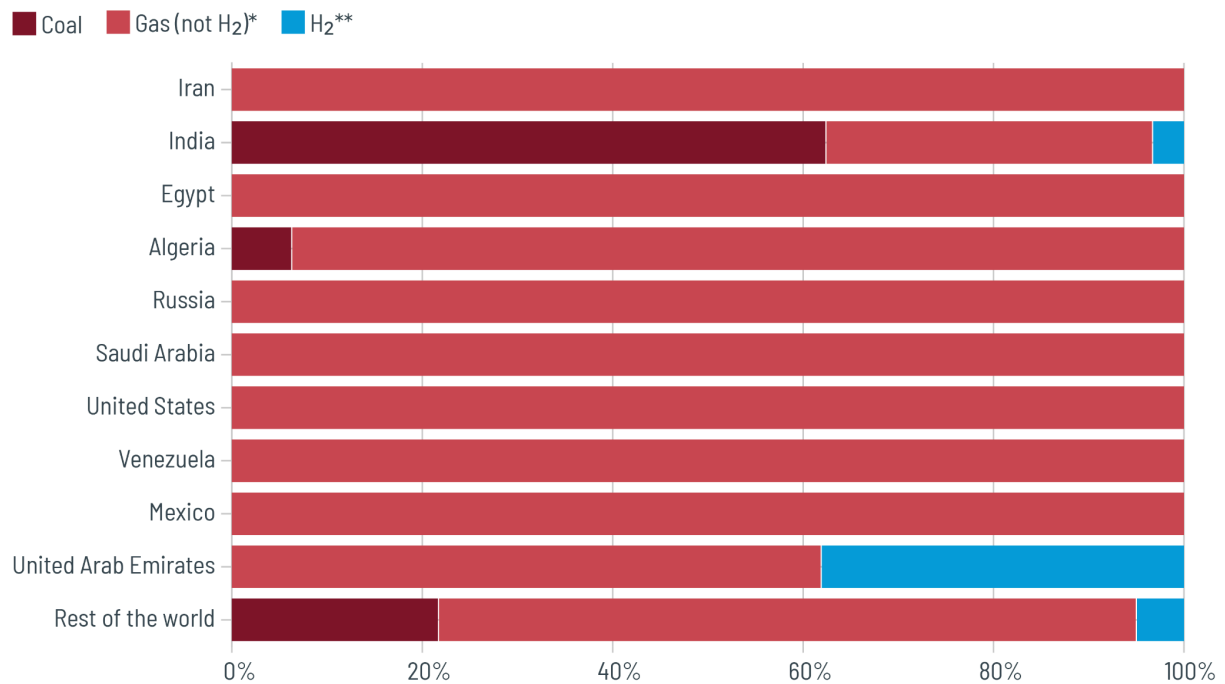
## Direct reduced iron reductants

Although DRI technology is generally considered a lower-emissions alternative to BF, the emissions intensity of sponge iron largely depends on the reducing agents used in production. Syngas (reformed methane) is by far the dominant reductant in use, accounting for 65% of DRI capacity (excluding unknown reductants), followed by coal at 17%, gas of unknown variety at 13%, hydrogen (all colors) at 3%, and waste gas recovery at 2%.

Coal-based DRI technology can actually be [more](#) emissions-intensive than BF ironmaking, and 28 mtpa of operating DRI capacity around the world uses coal. Around 81% of this coal-based DRI capacity is located in India, with 62% of India's overall DRI fleet relying on coal rather than gas. Green hydrogen currently only represents a small fraction of reductants used in DRI at around 2%, highlighting the fact that lower-emissions DRI technology is still in the early stages of adoption. While DRI capacity is growing, shifts in reductant types are also necessary to achieve decarbonization goals.

## Most DRI operators have yet to use any H2 as a reductant

% of DRI capacity using each reductant in countries with the most DRI capacity



Source: Global Energy Monitor, Global Iron and Steel Tracker, March 2026

\*Includes gas (unknown type), syngas (reformed methane), waste gas recovery, and other fossil gas

\*\*Includes hydrogen (blue), hydrogen (green), and other unknown hydrogen

Figure 9

# What's in the development pipeline?

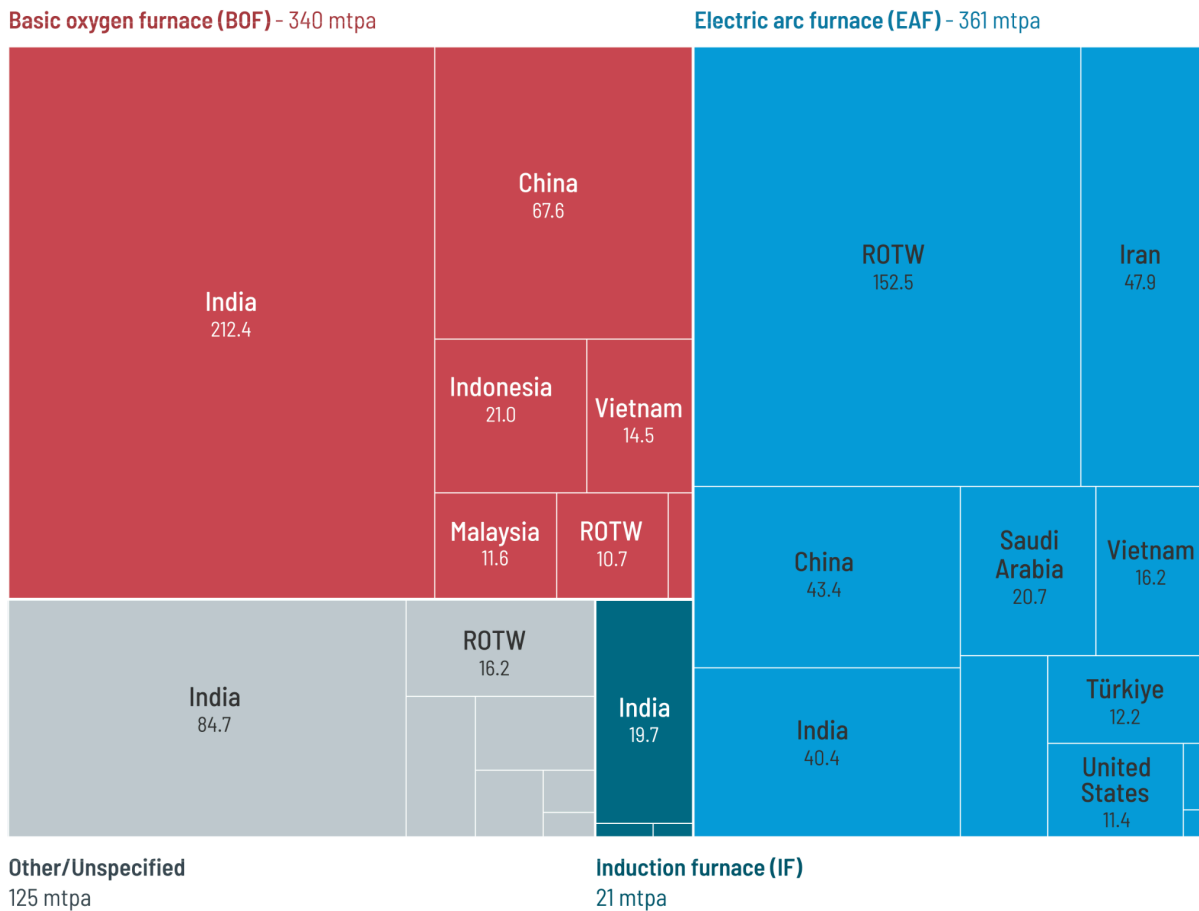
## Steelmaking capacity under development

Global steelmaking capacity under development is split between two primary technologies — EAF comprising 50% (361 mtpa) and BOF 47% (340 mtpa) of the capacity. IF capacity constitutes about 3% of developments globally, with India dominating 94% of such capacity.

Over the past five years, the industry has seen a drastic shift: While EAF made up only 21% under construction in 2021 compared to 79% for BOF, those figures have now nearly flipped to 73% and 27%, respectively.

## Around half of steelmaking capacity under development still plans to use coal-based BOF technology

Steelmaking capacity in development by technology type and country, in mtpa



Source: Global Energy Monitor, Global Iron and Steel Tracker, March 2026

Figure 10

On a regional level, India is the primary driver of global steelmaking development, accounting for 42% (357 mtpa) of all developing capacity – triple the amount of its nearest competitor, China (112 mtpa), followed by Iran (50 mtpa) and Vietnam (39 mtpa). However, in India less than 8% of BOF capacity in development has actually broken ground, meaning there is a window of opportunity to change these plans with immediate action. India's expansion is heavily reliant on coal-based technology: India now accounts for nearly two-thirds (62%) of all BOF capacity in development globally, a massive increase compared to its 6% contribution just five years ago. The second largest BOF developer is China (20%, 68 mtpa), which shows a decrease in planned capacity of 4% compared to the previous year. Meanwhile, the EAF capacity under development is more evenly distributed. Iran leads with 13% (48 mtpa) of EAF developing capacity, followed closely by China (12%, 43 mtpa) and India (11%, 40 mtpa).

## Ironmaking capacity under development

Globally, the ironmaking pipeline is split between BF at 57% (319 mtpa) and DRI production at 43% (240 mtpa). Over the last year, DRI capacity in development grew nearly 25 mtpa compared to a 16 mtpa increase in BF developing capacity. However, the continued expansion of BF capacity to any degree poses a concern and threatens to further entrench coal-based steelmaking. Additionally, around 17% of DRI capacity uses coal as a reductant and cannot be decarbonized.

India is responsible for 60% of all BF capacity in development, and China accounts for 26%, while India and China accounted for 47% and 35% of global BF developing capacity last year, respectively. This change indicates that India's BF projects in the pipeline are growing steadily while China's are shrinking. In the last year, India added 50 mtpa of BF developing capacity without retiring any existing capacity. In comparison, China's developing capacity declined by 23 mtpa and the country retired 40 mtpa during the same period. Still, 94% of China's massive BF fleet continues to operate with no plans for retirements, even as the country continues to add significant new BF capacity.

## Evolving top producer dynamics

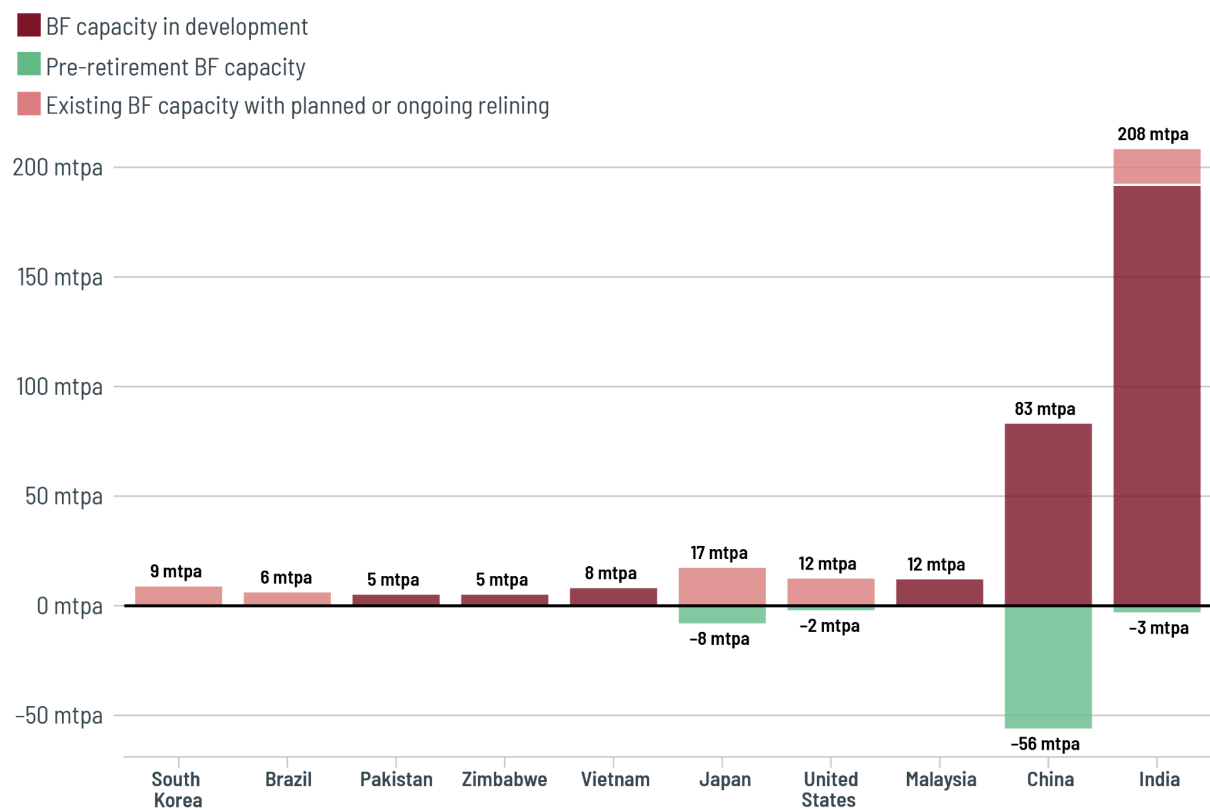
China remains the global leader in both iron and steel operating capacity, especially in BF ironmaking. Because of the massive amount of capacity in China, the country has immense power to affect global decarbonization goals through shifting away from coal-based capacity and leaning into scrap-EAF steelmaking and green H<sub>2</sub>-DRI ironmaking. In general, though, China's growth appears to be leveling off, with some coal-based capacity retiring and a modest shift toward lower-emission technologies.

In contrast, India leads in capacity under development, with the largest share of new capacity, particularly in coal-based BF capacity. India's expansion is heavily coal dependent, with a massive amount of BF capacity in development and a large share of coal-based DRI in its DRI fleet. While China still dominates the present coal-based

steelmaking production, India is in position to shape the future industry with its carbon-intensive iron and steelmaking. However, India only moved about 3.5% of the 2025 BF capacity in development into operation by 2026, whereas China moved approximately 12% of 2025 BF development capacity into operation in 2026. Further, only 5% of ironmaking plans in India have actually broken ground. This discrepancy indicates that, although India has ambitious plans to expand its steel industry, immediate action could potentially redirect the country to decarbonized routes.

## India’s and China’s investments will shape the future of iron decarbonization

Planned blast furnace capacity development, compared against planned retirements, in million tonnes per year (mtpa)



Source: Global Energy Monitor, Global Iron and Steel Tracker, March 2026



Figure 11

DRI development is more widely distributed: India leads with 16% of global developments, followed closely by Iran (15%) and Australia (13%). China, however, has almost no DRI developments, only contributing 1% of the DRI capacity in the pipeline. This is particularly notable given China’s massive renewable buildout and potential for cheaper green hydrogen production. China has the potential to skip gas and go straight to dominating green DRI production by capitalizing on this infrastructure.

While the Middle East/North Africa region's current DRI expansions rely heavily on fossil fuels, integrating renewables and green reductants in the future could transform the region into a central hub for global decarbonization, with massive DRI projects underway in Libya (11 mtpa), Algeria (5 mtpa), and Egypt (3 mtpa). Although these countries are not top steel producers, DRI is easier to transport in its cooled form (hot briquetted iron) than iron from a BF, meaning that DRI and EAF production can be [decoupled](#) more easily than that of BF-BOF.

In 2025, there was 216 mtpa of DRI in development (168 mtpa announced and 48 mtpa under construction) and a 13 mtpa increase in DRI operating fleet over the past year, meaning only roughly 6% of planned capacity in the previous year came into operation this year. Meanwhile, the DRI pipeline continues to expand overall with an addition of nearly 25 mtpa planned capacity.

DRI capacity is projected to increase by 240 mtpa, or up 141% globally if all developments go into operation. By 2030, if all plans go into effect, DRI capacity will increase by 69% to 284 mtpa. By 2035, the DRI fleet will have increased by 76% to 296 mtpa, which would represent nearly 16% of overall ironmaking capacity at that point. While the majority of planned DRI capacity is still set to use fossil fuel as a reductant, 19% of developing DRI capacity plans to use some type of hydrogen as the primary reductant, with most of that (16% of all reductants) being green hydrogen.

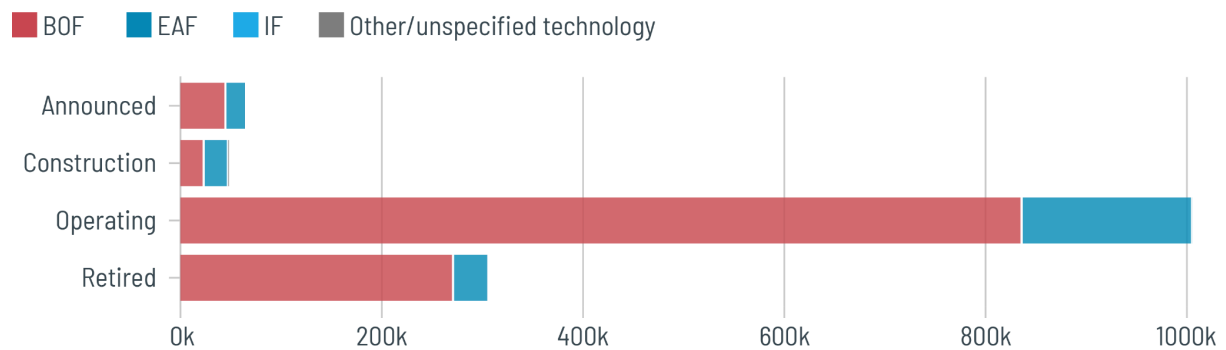
# Country profiles

## China

**Operating iron and steel:** China operates a total steel capacity of 1,073 mtpa. The production breakdown consists of 83% BOF (886 mtpa) and 17% EAF (188 mtpa). China’s ironmaking capacity stands at 918 mtpa, of which 99% is BF-based, with the remaining 1% coming from DRI technology and other unknown technologies.

### China’s steel capacity is still dominated by coal-based technologies

Steelmaking capacity by status and technology type, in ttpa



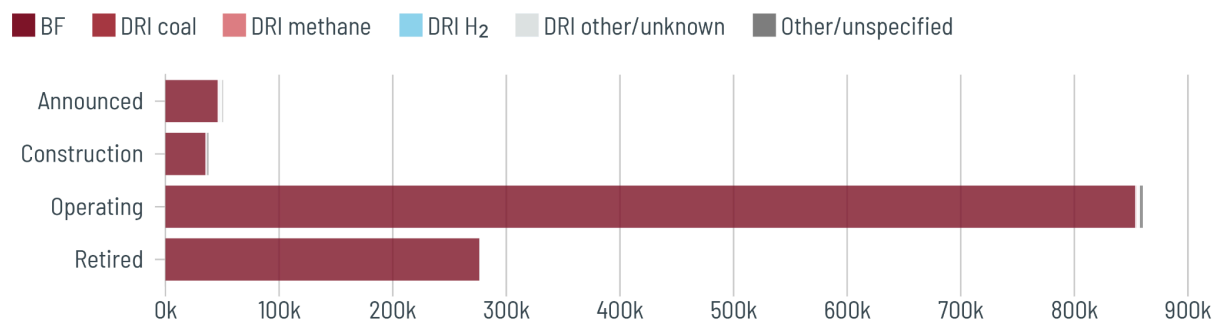
Source: Global Energy Monitor, GIST, March 2026

Figure 12



### China’s iron capacity is still almost entirely coal-based

Ironmaking capacity by status and technology type, in ttpa



Source: Global Energy Monitor, GIST, March 2026

Figure 13



**Transition updates and key policies:** China's updated [Nationally Determined Contribution \(NDC\)](#) in September 2025 commits to reducing total GHG emissions to 7–10% below peak levels by 2035, with the steel sector — responsible for about [16%](#) of emissions — playing a critical role in achieving this target. In 2025, China's State Council formally approved the [inclusion](#) of the steel industry, along with the cement and aluminum industries, in the National Carbon Trading market. The scheme specifically targets the highest carbon emitters, namely BF-BOF steel producers, covering over 98% of the total carbon emissions of the three major industries covered.

After suspending its steel capacity swap program in 2024, China proposed a more stringent swap [plan](#) later in 2025. For every tonne of new capacity built, at least 1.5 tonnes of old capacity must be eliminated. This presents an opportunity to shift the technology makeup of the country's industry by switching to EAF capacity; however, this is predicated on scrap processing and transportation infrastructure and clean energy development for effective implementation.

With the massive renewable [buildout](#) and lower cost of green hydrogen production, China has the potential to become a dominant force in green DRI technology. This is evident when looking at recent movements in the Chinese steelmaker Baosteel, the world's biggest steelmaker, who has [announced](#) a 1 mtpa DRI integrated plant to run on hydrogen. In January 2026, another Baowu subsidiary [launched](#) a green hydrogen project directly connected to an offshore wind farm, becoming the first in China.

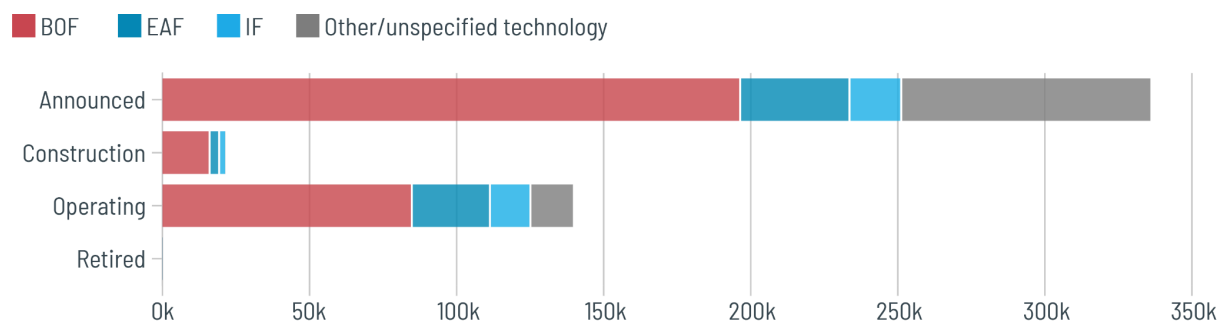
**Coal-based production:** China currently operates 911 mtpa of BF capacity, with 83 mtpa of capacity in the pipeline. In the past year, China retired 40 mtpa of capacity, with 56 mtpa of capacity in planned retirement. With the world's average BF age being 26 years old, China has the youngest operating BF fleet, averaging 13 years old. Since 2020, China has relined approximately 307 mtpa of capacity.

## India

**Operating iron and steel:** India operates a total steel capacity of 140 mtpa. The production breakdown consists of 61% BOF (86 mtpa), 19% EAF (27 mtpa), and 10% IF (14 mtpa).<sup>13</sup> India’s ironmaking capacity stands at 159 mtpa, 75% of which is BF-based, 23% (37mtpa) coming from DRI capacity, and the remaining 2% from ironmaking with other or unspecified technologies.

### India’s steel capacity is largely coal-based, with a notable fleet of IFs

Steelmaking capacity by status and technology type, in ttpa



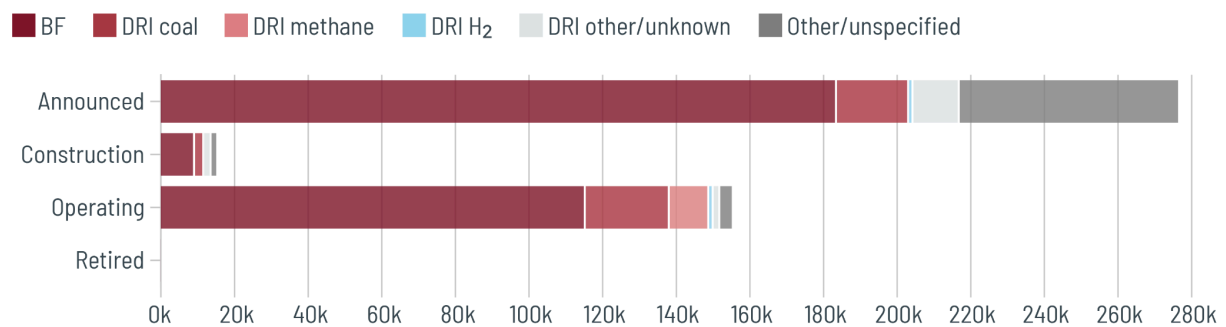
Source: Global Energy Monitor, GIST, March 2026

Figure 14



### India’s iron fleet is overwhelmingly coal-based, with plans to more than double current operating capacity

Ironmaking capacity by status and technology type, in ttpa



Source: Global Energy Monitor, GIST, March 2026

Figure 15



<sup>13</sup> Because many IFs are located at small plants that fall under the GIST’s 500 ttpa threshold for inclusion, the true IF capacity in India is significantly higher than these data show.

**Transition updates and key policies:** India has a net-zero emissions target by 2070 to reduce its economy's carbon intensity by 45% compared to 2005 levels. Simultaneously, India is targeting a crude steel production capacity of 300 MT by 2030 and [500 MT in 2047](#), according to its [2017 National Steel Policy](#), with the objective to significantly grow its domestic steel industry. With its [Domestically Manufactured Iron & Steel Products](#) policy, India aims to bolster its industry through government procurement.

India's Ministry of Steel has also published a green steel roadmap. In the latest version of the National Scrap Recycling policy, India aims to slowly increase the share of scrap in its steel production to the global average of [31%](#) in order to conserve raw materials consumption, reduce raw material imports, and lower steel sector emissions. In 2024, India introduced the [Green Steel Taxonomy](#), becoming the first country to introduce such definitions. It defines green steel as steel with carbon emissions intensity less than 2.2 tCO<sub>2</sub>e per tonne of finished steel. However, this threshold sits only slightly below the [global coal-based average emission intensity](#), suggesting that the taxonomy does not necessarily function as an incentive for radical technological shift towards green steel production. Although India is implementing positive decarbonization policies, the steel industry will remain emissions-intensive unless the coal-based capacity under development is re-evaluated.

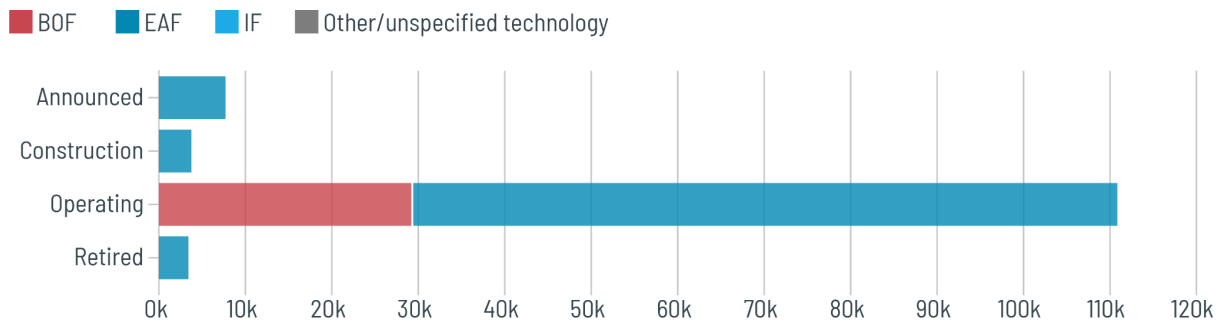
**Coal-based production:** India currently has 119 mtpa of operating BF capacity, with 192 mtpa additional capacity under development, with no existing retired BF capacity and only about 3% of the operating (3.5 mtpa) capacity planned for retirement. India's operating BF fleet has an average age of 25 years old, making it a relatively younger fleet. Since 2020, almost 18 mtpa of BF capacity has been relined, and 5.5 mtpa has plans to be relined between now and 2030.

## United States

**Operating iron and steel:** As the world’s third-largest steelmaker, the United States has a total operating steel capacity of 111 mtpa, with almost three-quarters of that capacity using EAF (82 mtpa, 74% of its total) and 26% (29 mtpa) using BOF. U.S. ironmaking capacity stands at 30 mtpa, of which 23 mtpa is BF-based (78%) and 7 mtpa is DRI-based (22%). This capacity profile and a [high ratio of recycled scrap steel](#) enable steelmaking in the U.S. to have a relatively low average emissions intensity compared to most BF-BOF heavy producers.

### The United States’ operating steel fleet is mostly EAF-based, with 100% EAF in the pipeline

Steelmaking capacity by status and technology type, in ttpa



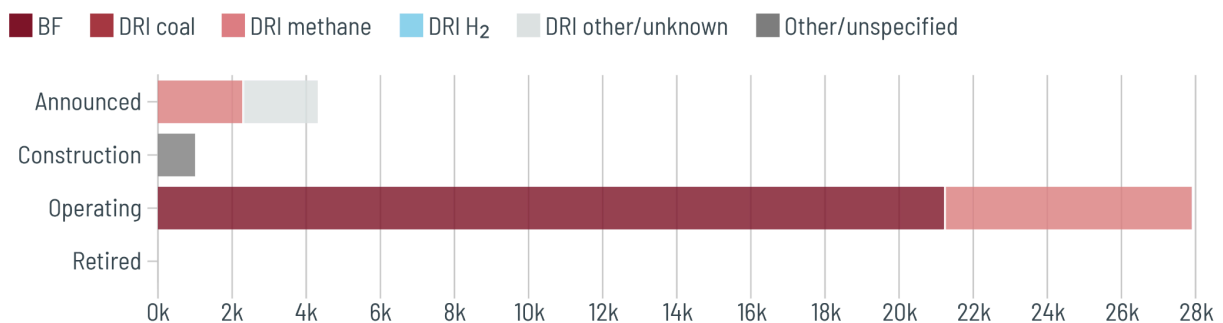
Source: Global Energy Monitor, GIST, March 2026

Figure 16



### The United States’ operating iron capacity is mostly coal-based, with fossil-based DRI in the pipeline

Ironmaking capacity by status and technology type, in ttpa



Source: Global Energy Monitor, GIST, March 2026

Figure 17



**Transition updates and key policies:** In March 2025, the Trump administration restored a 25% tariff on steel imports from all countries, then raised it to [50%](#) in June, with only the UK remaining at 25% pending separate trade arrangements. The administration framed the move as necessary to protect domestic steel capacity and reduce dependence on imports. The administration lifted the Biden administration's block on Nippon Steel's acquisition of U.S. Steel, and the deal was finalized in June under a national security agreement. The agreement gave the U.S. government a "golden share" and tied the approval to \$11 billion in new investment by 2028, including a greenfield project, all aimed at modernizing U.S. Steel operations.

The industry's decarbonization policies shifted sharply in 2025. The Trump administration rescinded key Biden-era climate executive orders and ceased implementation of the Paris framework. The United States formally exited the Paris Agreement in January 2026, increasing uncertainty around long-term federal support for industrial decarbonization. The policy discontinuation hit project pipelines: Cleveland-Cliffs [dropped](#) its planned hydrogen-based Middletown modernization after federal support unraveled, [idled and temporarily](#) closed facilities, and moved back toward [extending the life](#) of existing coal-based assets.

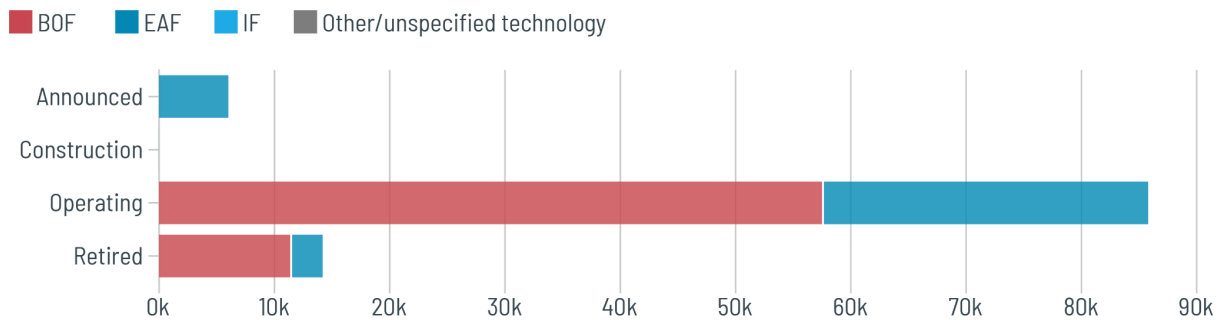
**Coal-based production:** The U.S. continues to have the world's oldest BF fleet, with an average age of 80 years in 2026. It has an operating BF capacity of 23 mtpa, no BF capacity under development, and 2 mtpa planned for retirement. BF steelmakers in the U.S. are focused on extending the life of their coal-based assets, threatening not only global decarbonization goals but also the [health](#) of local communities. Around 9 mtpa of capacity has been relined since 2020, and approximately 12 mtpa has plans to be relined between now and 2030. Cleveland-Cliffs plans to [continue relining](#) BFs rather than replacing them, with a relining scheduled for 2027 and another one under discussion. Meanwhile, Nippon Steel's U.S. Steel investment program is subject to the U.S. government veto power over capacity reductions across U.S. Steel's domestic footprint, including [restrictions on closing, idling, or selling](#) most of its assets by 2035.

## Japan

**Operating iron and steel:** Japan operates a total steel capacity of 106 mtpa. The production breakdown consists of 73% BOF (77 mtpa) and 27% EAF (29 mtpa). Japan’s ironmaking capacity stands at 80 mtpa, of which 99% is BF-based, with the remaining 1% coming from DRI capacity.

### Japan plans for new EAF-based steel capacity, while retiring mainly coal-based capacity

Steelmaking capacity by status and technology type, in ttpa



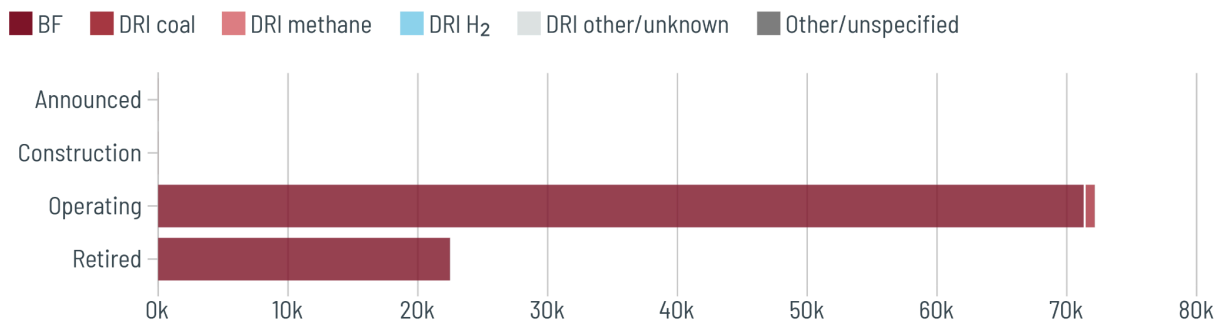
Source: Global Energy Monitor, GIST, March 2026

Figure 18



### Japan’s operating iron fleet is shrinking, but is almost exclusively coal-based BF capacity

Ironmaking capacity by status and technology type, in ttpa



Source: Global Energy Monitor, GIST, March 2026

Figure 19



**Transition updates and key policies:** Impacted by U.S. tariffs and national demographic changes, the Japanese steel sector is experiencing unprecedented challenges, forcing some companies to look elsewhere for operations. The United States’ [50%](#) tariff on foreign steel imports has caused domestic steel production to shrink as exporting has become costly. Simultaneously, Japan’s crude steel production has also fallen to its [lowest level](#) since 1969 to 80.7 Mt, due to a shortage of labor and influx of cheap imports from China. The chairman of Nippon Steel has warned that it will

take more time for Japanese steel demand to recover as the country relies so heavily on steel exports to the U.S. Amid the slowed domestic steel demand and decreased crude steel production, [JFE Steel Corp](#) aims to position itself as the largest foreign steel producer in India by investing \$2 billion in the country and establishing a coal-based [joint venture](#) with India's JSW Steel.

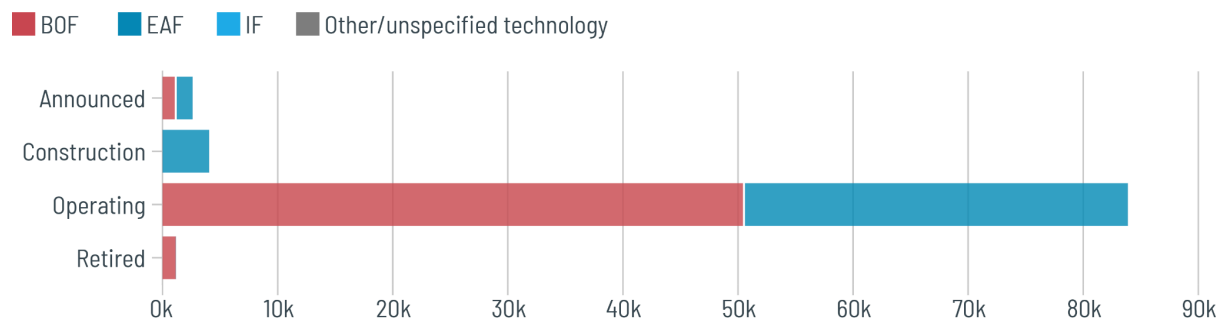
**Coal-based production:** Japan currently has 71 mtpa of operating BF capacity, with nothing in the pipeline. Japan has retired 22 mtpa of capacity with an additional 8 mtpa that currently has a retirement plan. Japan's operating BF fleet has an average age of 48, relatively an older fleet compared to the world's average. Since 2020, almost 19 mtpa of BF capacity has been relined, and approximately 17 mtpa has plans to be relined between now and 2030.

## Russia

**Operating iron and steel:** Russia operates a total steel capacity of 85 mtpa. The production breakdown consists of 61% BOF (52 mtpa) and 39% EAF (33 mtpa). Russia’s ironmaking capacity stands at 70 mtpa, of which 89% is BF-based (62 mtpa), and 11% (8 mtpa) of which is DRI capacity.

### Russia’s developing steel capacity includes both EAF and BOF-based capacities

Steelmaking capacity by status and technology type, in ttpa



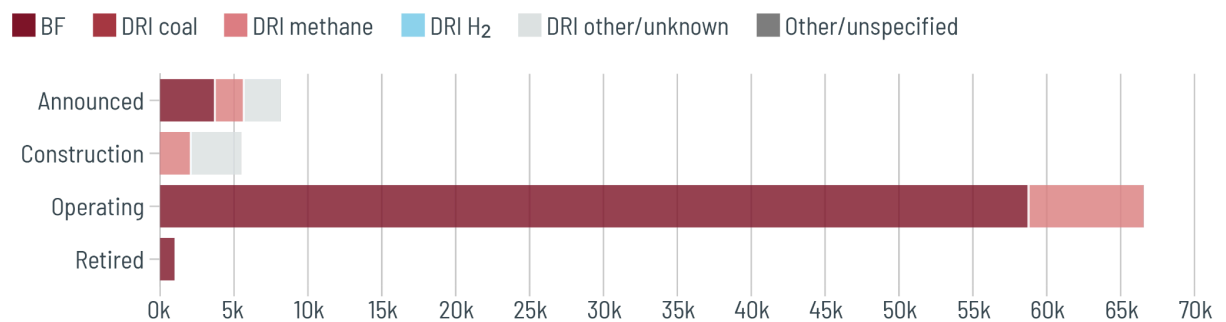
Source: Global Energy Monitor, GIST, March 2026

Figure 20



### Russia’s developing iron capacity is mainly DRI, but the majority is fossil-based

Ironmaking capacity by status and technology type, in ttpa



Source: Global Energy Monitor, GIST, March 2026

Figure 21



**Transition updates and key policies:** The Russian government announced in January 2026 that they have identified the iron and steel sector as one that is expected to shrink, requiring immediate support. As a result, the government is considering an [excise tax](#) on steel imports, with China and Kazakhstan being the top two steel importers. In March 2026, the Russian government rejected [tax break requests](#) from its domestic steel producers amid falling demand and rising imports, instead prioritizing spending linked to the war in Ukraine. Recently, an [initiative](#) started by the EU calls on the European

Commission to take measures to stop imported iron and steel from Russia and Belarus, with the objective of stopping funds to Russia in support of Ukraine. Meanwhile, the Russian government has also announced an [export quota](#) of 5% on iron scrap and mixed ferrous metals to countries outside the Eurasian Economic Union effective from January 1, 2026 to December 31, 2026, aiming to reduce oversupply in the Russian market.

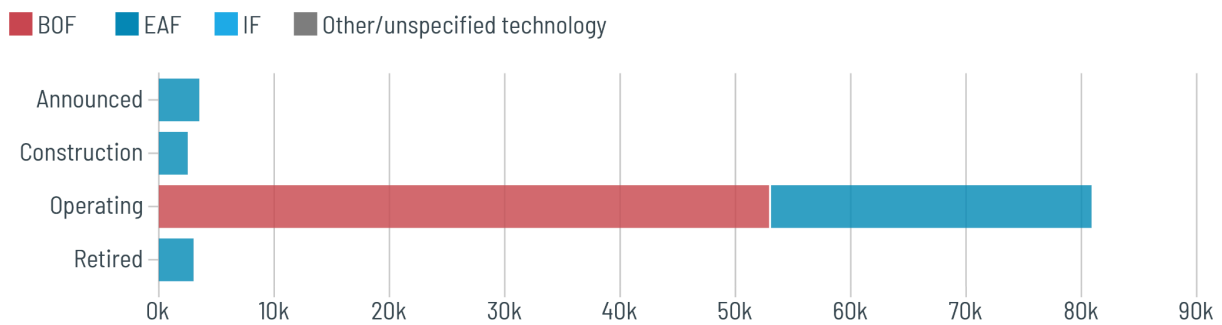
**Coal-based production:** Russia currently has 62 mtpa of operating BF capacity, with almost 4 mtpa of newly announced BF capacity. Russia has retired nearly 1 mtpa of BF capacity with an additional 4 mtpa capacity that currently has a retirement plan. Russia's operating BF fleet has an average age of 55, a relatively older fleet compared to the world's average. Since 2020, 27 mtpa of BF capacity has been relined.

## South Korea

**Operating iron and steel:** South Korea operates a total steel capacity of 81 mtpa. The production breakdown consists of 66% BOF (53 mtpa) and 34% EAF (28 mtpa). South Korea’s ironmaking capacity stands at 54 mtpa, of which 92% is BF-based (50 mtpa), with barely any DRI capacity.

### South Korea’s operating steel fleet is mostly BOF-based, with EAF capacity retiring and developing at similar rates

Steelmaking capacity by status and technology type, in ttpa



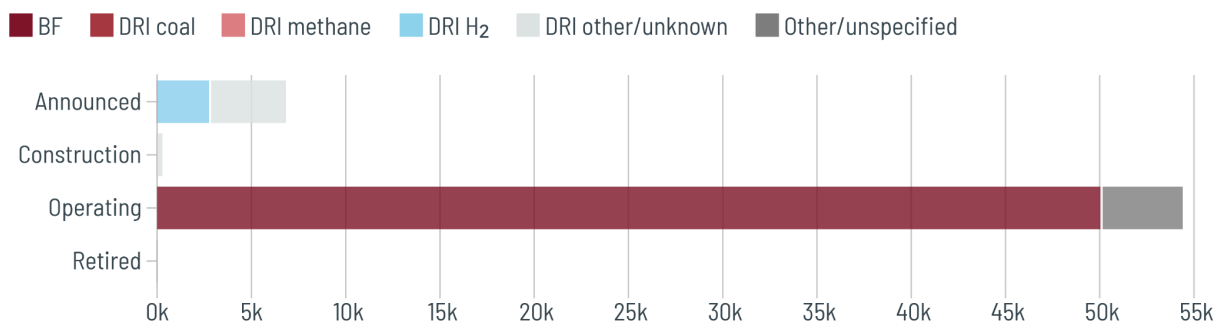
Source: Global Energy Monitor, GIST, March 2026

Figure 22



### South Korea’s iron capacity is coal-based, with some hydrogen-DRI in the pipeline

Ironmaking capacity by status and technology type, in ttpa



Source: Global Energy Monitor, GIST, March 2026

Figure 23



**Transition updates and key policies:** The stability of the Korean steel industry has been cracking due to cheap Chinese imports, U.S. tariffs, a decline in domestic demand, and global carbon emissions reduction pressure. As a result, POSCO, the world’s [seventh-largest steelmaker](#), [permanently closed](#) its [Pohang No. 1 Steelmaking plant](#) and its [No. 1 bar mill](#) in 2024. Hyundai Steel took several actions, including the indefinite [shutdown](#) of its Pohang No. 2 plant, the [permanent closure](#) of half of the rebar production facilities at the Incheon plant, and putting the medium section business unit

at Pohang Plant No. 2 up [for sale](#). Amid this time of struggle, the South Korean government announced a new set of [measures](#) to provide support. This includes allocating 400 billion won (approximately 267 million USD) for steel export support, mandating quality certification for imported steel to prevent dumping schemes, developing AI-based technologies for steelmaking innovation, and progressing the advancement of hydrogen-based steel production. In addition to these measures, the government passed the [K-Steel Act](#) with the objective of stabilizing the steel sector and progressing towards carbon neutrality. To support these objectives, the policy offers subsidies for selecting hydrogen-based steel technology and will designate special green steel zones and sustain local scrap supply chains. Despite the policy's support from lawmakers, critics within the steel industry are dissatisfied with the exclusion of electricity subsidies needed to switch to EAF technology.

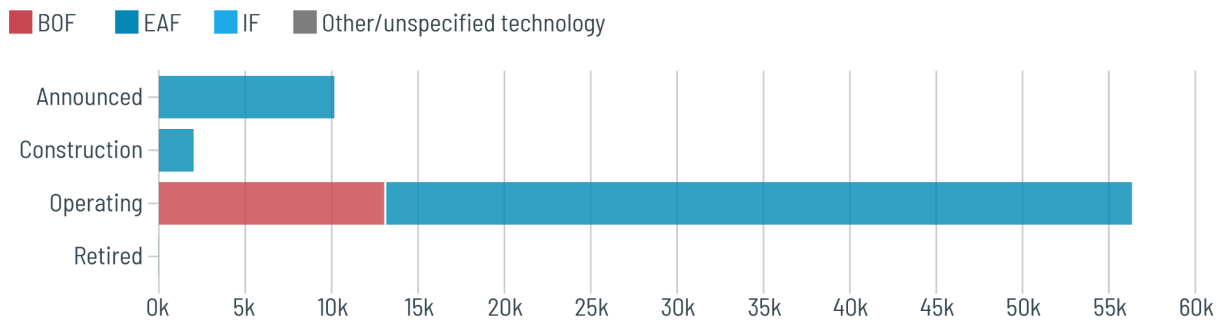
**Coal-based production:** South Korea currently has 50 mtpa of operating BF capacity, with no new capacity in the pipeline. POSCO permanently shut down [Pohang BF No. 1](#) in 2021 after the unit underwent two relinings. South Korea's operating BF fleet has an average age of 33. Since 2020, 15 mtpa of BF capacity has been relined with no plans disclosed publicly to reline other BF capacity in the near future. South Korea faces an opportunity to retire its coal-based ironmaking capacity.

## Türkiye

**Operating iron and steel:** Türkiye operates a total steel capacity of 56 mtpa. The production breakdown consists of 23% BOF (13 mtpa) and 77% EAF (43 mtpa). Although its steelmaking relies more on lower-emissions EAF technology, Türkiye’s ironmaking capacity is 100% BF-based (15 mtpa).

### Türkiye’s operating steel capacity is mostly EAF-based, with 100% developing capacity also EAF

Steelmaking capacity by status and technology type, in ttpa



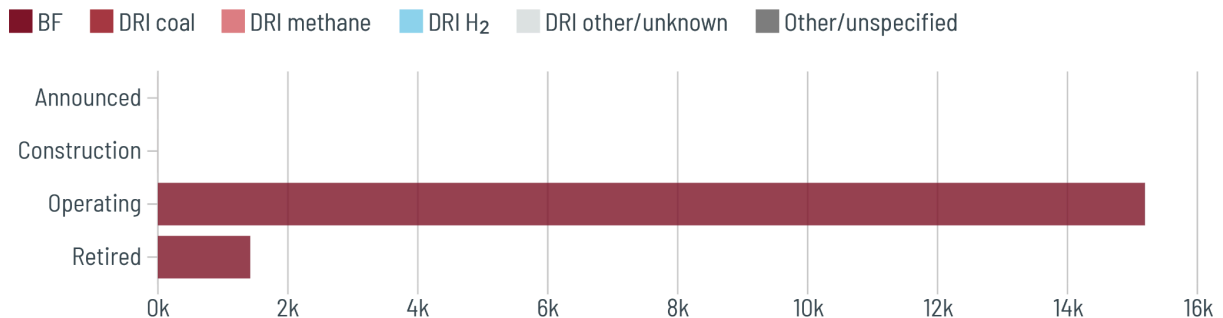
Source: Global Energy Monitor, GIST, March 2026

Figure 24



### Türkiye’s iron fleet is 100% coal-based, but shrinking

Ironmaking capacity by status and technology type, in ttpa



Source: Global Energy Monitor, GIST, March 2026

Figure 25



**Transition updates and key policies:** Today, Türkiye’s steel industry is 77% EAF-based. However, the electricity powering the EAFs relies heavily on imported coal. In 2025, the country [received](#) imports from the U.S. (the largest importer), Australia, Russia, and Canada. With solar and wind power [growth](#) in the country, there is an opportunity for reductions in indirect emissions from steelmaking via increases in renewable power. Since the majority of steel fleets are EAF-based, there is also an immense demand for scrap. In 2025, it was discovered that the country has been sourcing scrap metal from war-torn countries. Reporters estimated that between [6%–10%](#) of the scrap recycled in

Türkiye comes from countries in conflict, including Syria, Libya, Lebanon, Ukraine, Russia, and Israel/Palestine.

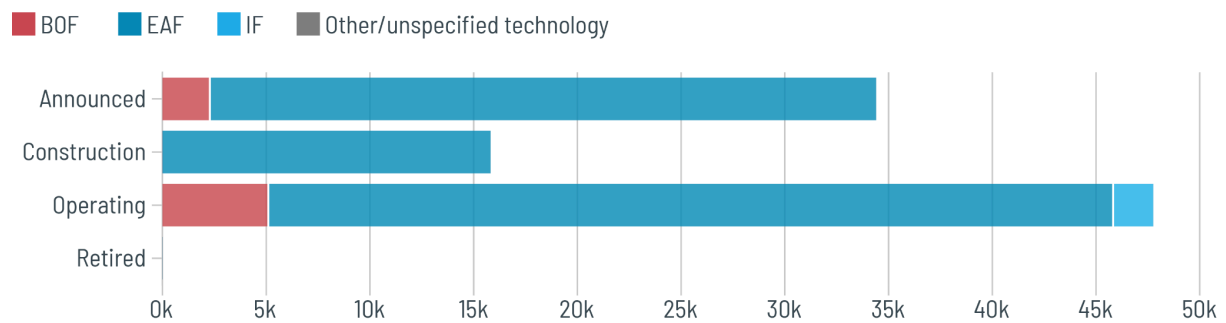
**Coal-based production:** Türkiye currently has 15 mtpa of operating BF capacity, with no new capacity in the pipeline. Türkiye has almost 1.5 mtpa of capacity that's already retired. Türkiye's operating BF fleet has an average age of 27. Since 2020, 2.6 mtpa of BF capacity has been relined with no current plans to reline other BF capacity in the near future.

## Iran

**Operating iron and steel:** Iran operates a total steel capacity of 48 mtpa. The production breakdown consists of 11% BOF (5 mtpa), 85% EAF (40 mtpa), and 4% IF (2 mtpa). Iran’s ironmaking capacity stands at 61 mtpa, of which 91% is DRI-based (56 mtpa), with BF production (5 mtpa) representing only 9% of capacity. Iran has a major 12 mtpa DRI buildout in the past year, a 26% growth compared to last year. However, several Iranian steel plants have been targeted by Israeli or American airstrikes in the war that began in February 2026, and the consequences for Iranian steel production are unclear.

### Iran’s developing and operating steel capacity is primarily EAF-based

Steelmaking capacity by status and technology type, in ttpa



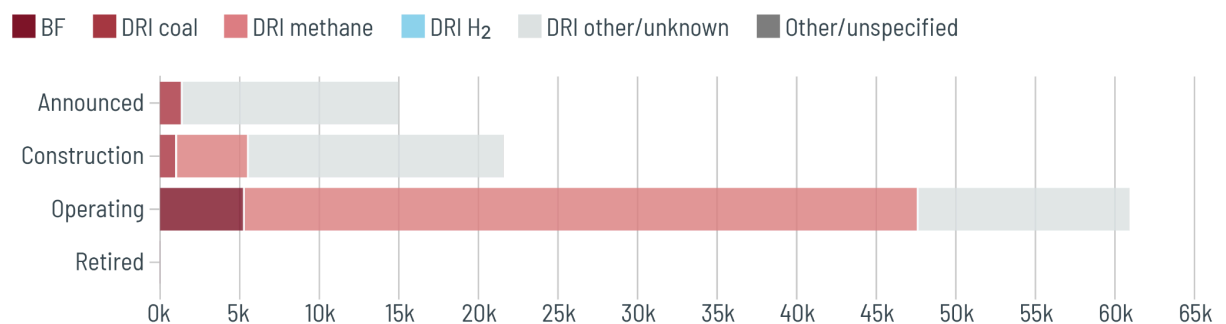
Source: Global Energy Monitor, GIST, March 2026

Figure 26



### Iran’s operating iron capacity is largely methane-based DRI technologies, with more in development

Ironmaking capacity by status and technology type, in ttpa



Source: Global Energy Monitor, GIST, March 2026

Figure 27



**Transition updates and key policies:** Iran is experiencing a triple crisis of [water](#) and [electricity](#) shortages and extreme heat, with widespread consequences. On average, the DRI ironmaking used for most Iranian production consumes a large amount of water and electricity, [reportedly](#) around 1.4 m<sup>3</sup>/tonne of water and more than 114 kWh/tonne of electricity for the [Midrex process](#). In May 2025, heavy industry sectors in Iran were [ordered](#) to slash energy consumption for 15 days, severely impacting production. However, Iran is still pushing out massive expansions in iron and steel capacity. In 2025, the EU triggered [sanctions](#) on Iran, imposing strict restrictions on steel trade. This includes a complete ban on unprocessed and semi-finished steel products, effective for contracts signed after January 1, 2026.

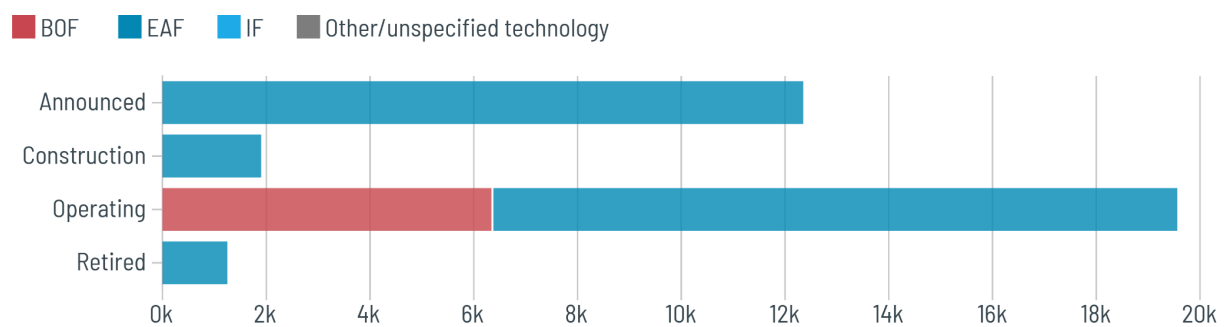
**Coal-based production:** Iran currently has 5 mtpa of operating BF capacity, with no new capacity in the pipeline. Iran's operating BF fleet has an average age of 26 years. Since 2020, no BF capacity has been relined, and there are no current plans to reline other BF capacity in the near future. Iran is heavily dependent on methane-based DRI production.

## Germany

**Operating iron and steel:** Germany operates a total steel capacity of 45 mtpa. The production breakdown consists of 70% BOF (32 mtpa) and 30% EAF (13 mtpa). Germany’s ironmaking capacity stands at 33 mtpa, 98% of which is BF-based (32 mtpa), with only a 2% share of DRI capacity (0.6 mtpa).

### Germany’s developing steel capacity is 100% EAF-based, and will approximately double its operating EAF fleet

Steelmaking capacity by status and technology type, in ttpa



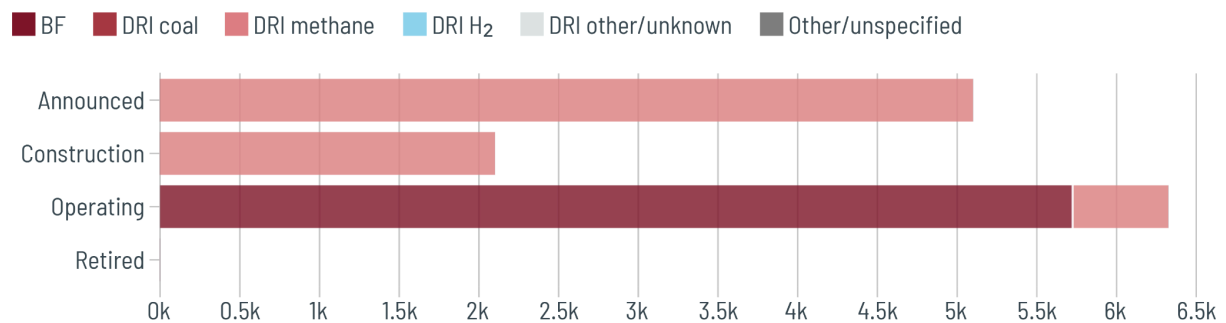
Source: Global Energy Monitor, GIST, March 2026

Figure 28



### Germany’s developing iron capacity is 100% methane-based DRI, adding to a largely coal-based fleet

Ironmaking capacity by status and technology type, in ttpa



Source: Global Energy Monitor, GIST, March 2026

Figure 29



**Transition updates and key policies:** The German steel industry has been dealing with [high electricity prices](#) due in part to the Russia-Ukraine war and steel competition from foreign nations importing steel into an otherwise weak market, leading to disruption in steel production and some producers cancelling their transition plans. [ArcelorMittal](#) cancelled DRI-EAF plans for two of their German plants in Bremen and Eisenhüttenstadt. HKM had originally announced plans to transition to EAF-DRI

production by 2025, but all information about the transition has been [removed](#) from their website. Thyssenkrupp had announced plans to transition to EAF-DRI production by the end of 2025. However, they have been facing [weak demand](#) and have released no information regarding such transition since. The company also [stated](#) that they cannot confirm the economic viability of the transition due to the lack of green hydrogen.

**Coal-based production:** Germany currently has 32 mtpa of operating BF capacity, with no new capacity in the pipeline. Germany has no existing retired BF capacity, but 26 mtpa (81% of currently operating BF) has plans to retire. Germany's operating BF fleet has an average age of 54. Since 2020, 16 mtpa of BF capacity has been relined with no current plans to reline other BF capacity in the near future.

## European Carbon Border Adjustment Mechanism (CBAM)

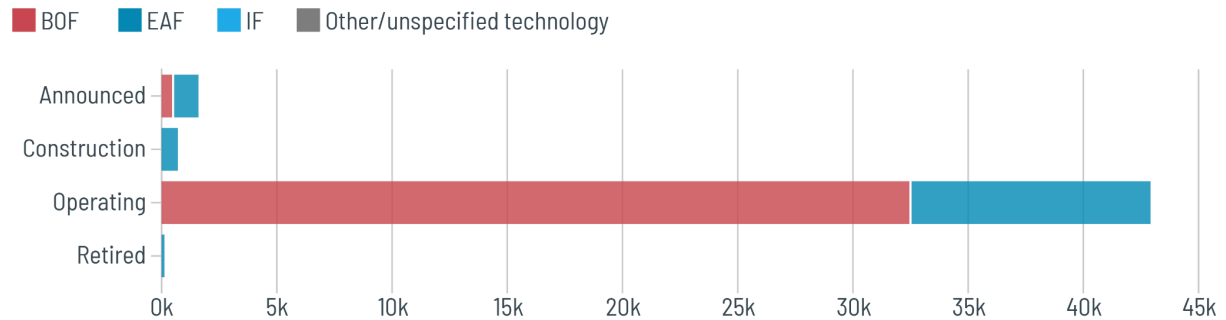
The European Union's CBAM officially went into effect in [January 2026](#), instituting a carbon price based on embodied emissions in imported steel. The EU is a major importer of steel from [countries](#) with the highest emissions intensity in steel production like China, India, Russia, Vietnam, and Japan. With a major portion of the export market now implementing carbon pricing on their products, these producers are forced to examine their production methods in a new light. India in particular is faced with a [32%](#) cost increase under CBAM and is already developing [new](#), lower-emissions [capacity](#) specifically for export to European markets.

## Brazil

**Operating iron and steel:** Brazil operates 43 mtpa of steelmaking capacity, broken down into 76% BOF (32 mtpa) and 24% EAF (10 mtpa). Its ironmaking capacity stands at 34 mtpa, all of it BF-based.

### Brazil’s operating steel fleet is largely BOF capacity

Steelmaking capacity by status and technology type, in ttpa



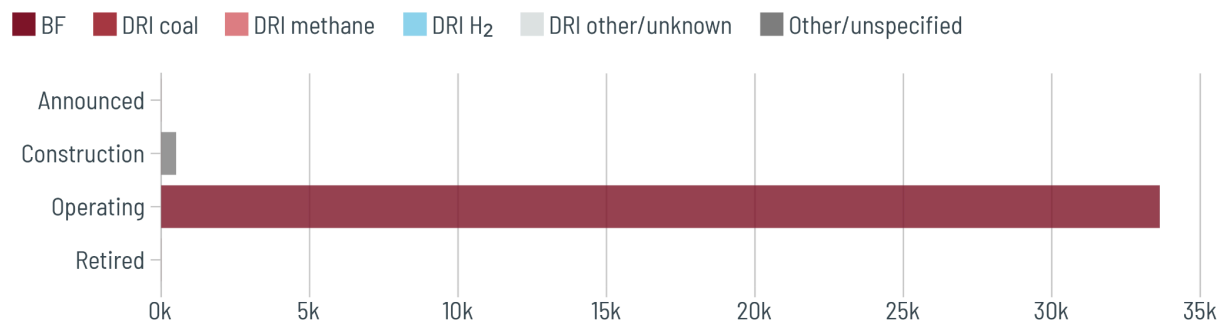
Source: Global Energy Monitor, GIST, March 2026

Figure 30



### Brazil’s operating iron fleet is 100% coal-based BF capacity

Ironmaking capacity by status and technology type, in ttpa



Source: Global Energy Monitor, GIST, March 2026

Figure 31



**Transition updates and key policies:** Brazil’s steel industry faces a [complex environment](#) of weakening domestic production and rising import penetration amid shifting trade dynamics. While domestic steel consumption grew in 2025, domestic steel producers still struggled financially with low capacity utilization due to cheap Chinese steel imports. Brazil’s steel industry job and investment losses reflect a slower and insufficient government response to Chinese steel imports. In contrast to steel production, iron mining exports surged. In 2025, Brazil achieved a record milestone, exporting 416 Mt of iron ore, a [7.1% year-to-year increase](#), largely driven by Vale, the world’s largest iron ore mining company.

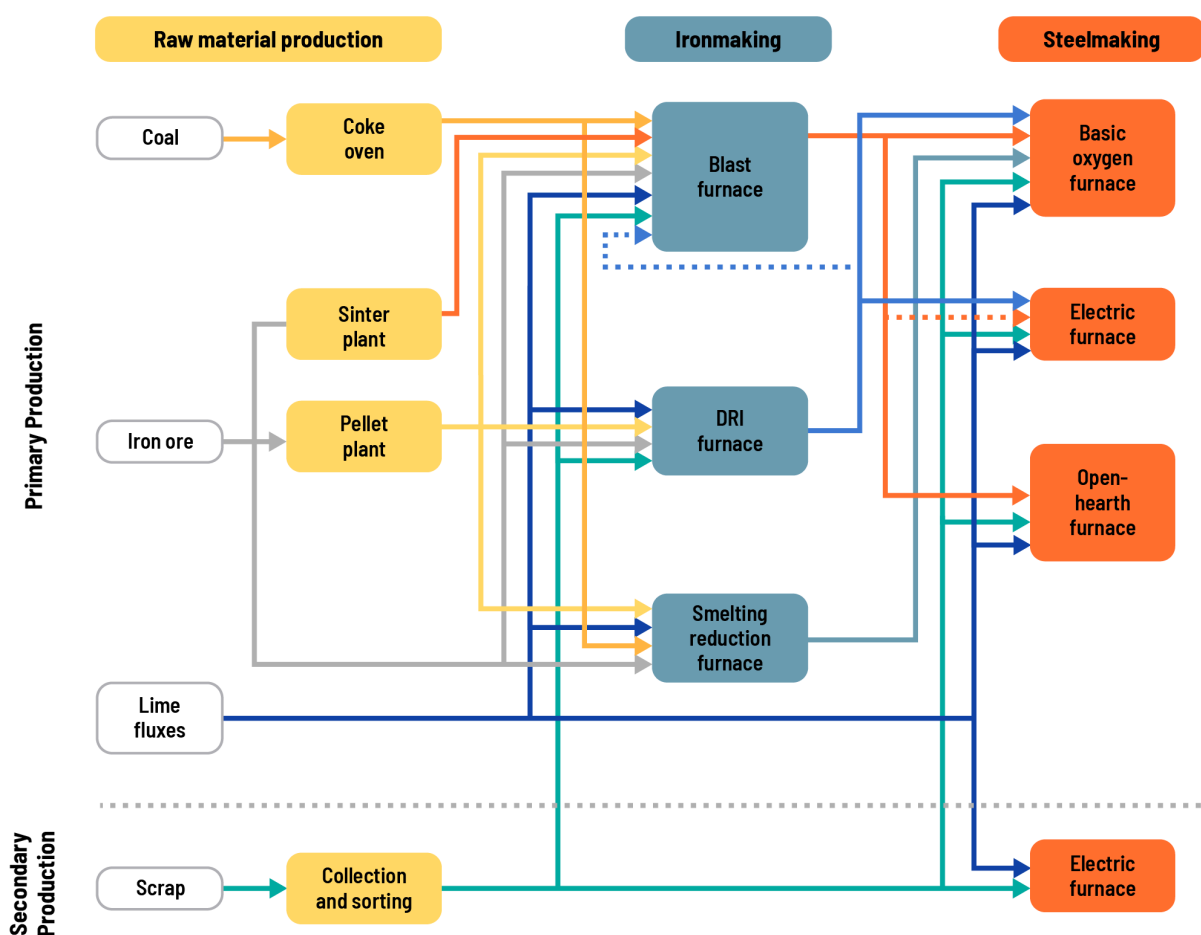
Brazil's decarbonization progress continues with the establishment of the Brazilian Greenhouse Gas Emissions Trading System (SBCE, in Portuguese) and ongoing system development and industry consultations. In March 2026, the government launched the [Plano Clima 2024–2035](#), now the main framework for decarbonization. The sectoral plan for Industry and Mining emphasizes increasing alternative energy uses such as renewables and biomass and promoting the development of green hydrogen. It also encourages energy efficiency by shifting more production to EAF-based methods and increasing the steel-scrap ratio (currently at about 60%). Additionally, the plan highlights industrial financing through [Fundo Clima](#), with a priority on CCS adoption and the modernization of industrial facilities.

**Coal-based production:** Brazil currently has 34 mtpa of operating BF capacity, with no new capacity in the pipeline. Brazil has no existing retired capacity or planned retirements. Brazil's existing BF fleet has an average age of 33. More than half of Brazil's BFs have been relined or started operations in the last eight years, which means that much of the fleet could continue operating beyond 2030 unless active measures are adopted. Since 2020, 4.7 mtpa of BF capacity has been relined with 4.4 mtpa planned to be relined between now and 2030. [Biochar use](#) to replace some met coal use continues in certain plants, but biochar's role in replacing met coal is misguided in driving a meaningful transition, particularly when considering [upstream emissions](#). Furthermore, there are growing doubts regarding the sustainability of biochar itself, particularly the potential risks for social and environmental injustices within its material supply chain.

# Appendices

## Appendix A: Main steel production pathways

Steelmaking currently uses two main production routes: (1) integrated blast furnace–basic oxygen furnace (BF–BOF) and (2) electric arc furnace (EAF) steelmaking, which typically uses a feed mix of direct reduced iron (DRI) and/or steel scrap. Open–hearth furnaces (OHF) are less commonly used, accounting for <1% of global steel capacity. The figure below displays the main steelmaking pathways, though there are increasingly additional pathways emerging as decarbonization potential is explored.



Source: [Iron and Steel Technology Roadmap](#), IEA, October 2020, as modified by Global Energy Monitor. All rights reserved.

Figure 32

## Appendix B: Sector emissions

There are generally three categories used to describe steel emissions: Scope 1 or “direct” emissions result from onsite processes and fuel use during production at the plant; scope 2 emissions are from purchased electricity, often estimated using the approximate CO<sub>2</sub> intensity of the grid supplying the power; and scope 3 emissions include processes upstream and downstream of the plant’s production, covering, for example, raw materials transportation and processing the steel into final products. Reported steel emissions intensities typically include scope 1 and 2 emissions only.

### Process emissions

In most production configurations, EAFs emit carbon with far less intensity than the traditional BF-BOF steelmaking route. The BF-BOF process, which uses coal as a reducing agent, produces enormous amounts of CO<sub>2</sub> — around [2.2](#) tonnes of CO<sub>2</sub>/tonne of steel (t CO<sub>2</sub>/t steel) when including both scope 1 and scope 2 emissions. Coal is the primary source of carbon emissions in global steel production. The BF process can never be fully decarbonized because of the integral nature of coal in production, making it an unsustainable technology for the industry in the long run.

EAFs cut emissions [dramatically](#) when using recycled scrap, which is the dominant feedstock today. However, EAF carbon emissions vary widely depending on each unit’s unique operation. Considering scope 1 and 2 emissions, EAFs using scrap as the primary feedstock emit around [0.3](#) t CO<sub>2</sub>/t steel on average, whereas those using methane-based<sup>14</sup> direct reduced iron (DRI) have higher carbon intensities of around [1.4](#) t CO<sub>2</sub>/t steel. In scrap-based EAF steel production, most CO<sub>2</sub> emissions come from the generation of the electricity consumed by the EAF, whereas in methane-DRI-EAF, most emissions are produced directly in ironmaking in addition to a comparable level of indirect EAF steelmaking emissions. Additionally, EAF production typically does not account for the [embodied emissions](#) of scrap used as feed.

DRI process emissions can vary widely depending on the reductant used. Coal-based DRI can produce [three times](#) the direct emissions as methane-based DRI, whereas DRI produced using green hydrogen can be configured to produce iron with net-zero scope 1 and 2 emissions. Established steel decarbonization pathways [rely heavily](#) on green H<sub>2</sub>-DRI-EAF production, as this is the most commercially available near-zero emissions technology.

There is also a distinction between DRI unit types and their decarbonization potential. For example, most methane-based shaft furnace models are [hydrogen-capable](#), meaning they can switch to this lower-emissions reductant, but most coal-based rotary kiln capacity cannot be easily transitioned to hydrogen. So, while DRI ironmaking can lend itself to decarbonization more so than BF-based production, operators need to

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<sup>14</sup> Methane-based DRI is also known as natural gas-based DRI.

commit to clear green hydrogen transition plans alongside any DRI developments in order to align with net-zero goals.

Carbon capture, use, and storage (CCUS) technologies have [yet to be proven on a large scale](#), and while they are incorporated into net-zero scenarios, they cannot represent the bulk of emissions reduction measures.

## Indirect emissions

In addition to direct emissions from production, indirect emissions from energy use add another [1.1 gigatonnes](#) (42% the size of direct emissions) to total steelmaking emissions.<sup>15</sup> Scope 2 emissions produced in electricity generation can vary greatly depending on the carbon intensity of the electricity source, oftentimes the local grid, meaning that the development of energy systems using renewable power is another important element in working toward net zero. This is particularly relevant in EAF production, where the [bulk of emissions are scope 2](#), but is a critical piece in decarbonizing all facilities.

There are also significant unreported emissions from metallurgical coal mining-related methane that are not included in most estimates. If these emissions were factored into steelmaking emissions models, the actual footprint could be as much as [27%](#) higher than currently reported. Please see GEM's [2022 Pedal to the Metal report](#), which describes coal mine methane leaks in more detail, and visit the [Global Methane Emitters Tracker](#) for more data on methane emissions from various sources including coal mines.

## Benchmarking emissions reductions

This report references several emissions-reduction roadmaps or benchmarking tools in looking at 2030 progress. The International Energy Agency's [Iron and Steel Technology Roadmap](#), [2021 Net Zero by 2050 Roadmap](#), and [2023 revised Net Zero Roadmap](#) are a few of these evaluation mechanisms. The clearest points of comparison between these sources and GEM's data are iron and steel production breakdowns by technology. The IEA states that in order to align with [2050 net zero goals by 2030](#), scrap should represent 38% of metallic inputs, and DRI should represent 17% of iron production, nearly 30% of which should use hydrogen as a reductant. However, because many of these goals have not been updated in several years, it is important to note that some milestones might have changed or may need to be adjusted given the industry's actual decarbonization progress.

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<sup>15</sup> This figure only reflects emissions from indirect energy use, not all indirect emissions. This is a total of 3.7 Gt, consisting of 2.6 Gt from direct emissions and 1.1 Gt indirect energy use emissions.

## Appendix C: Operating steelmaking capacity by country/area and production process

| Country/Area  | Total Operating Capacity (ttpa) | BOF (ttpa) | EAF (ttpa) | IF (ttpa) | Other/ Unspecified (ttpa) |
|---------------|---------------------------------|------------|------------|-----------|---------------------------|
| China         | 1,073,488                       | 885,642    | 187,606    | 240       | 0                         |
| India         | 140,459                         | 85,663     | 26,578     | 13,768    | 14,450                    |
| United States | 110,846                         | 29,301     | 81,545     | 0         | 0                         |
| Japan         | 105,600                         | 76,812     | 28,788     | 0         | 0                         |
| Russia        | 85,015                          | 51,660     | 33,355     | 0         | 0                         |
| South Korea   | 80,885                          | 53,000     | 27,885     | 0         | 0                         |
| Türkiye       | 56,332                          | 13,102     | 43,230     | 0         | 0                         |
| Iran          | 47,758                          | 5,100      | 40,723     | 1,935     | 0                         |
| Germany       | 44,720                          | 31,520     | 13,200     | 0         | 0                         |
| Brazil        | 42,917                          | 32,497     | 10,420     | 0         | 0                         |
| Vietnam       | 39,926                          | 25,574     | 9,502      | 4,350     | 500                       |
| Italy         | 31,736                          | 7,800      | 23,936     | 0         | 0                         |
| Taiwan        | 24,701                          | 15,001     | 9,700      | 0         | 0                         |
| Mexico        | 22,391                          | 2,500      | 19,891     | 0         | 0                         |
| Indonesia     | 21,400                          | 11,980     | 9,420      | 0         | 0                         |
| Ukraine       | 19,677                          | 12,255     | 3,303      | 17        | 4,102                     |
| Spain         | 18,840                          | 5,400      | 13,440     | 0         | 0                         |
| France        | 17,450                          | 11,850     | 5,600      | 0         | 0                         |
| Egypt         | 15,560                          | 0          | 15,560     | 0         | 0                         |
| Canada        | 14,550                          | 5,800      | 8,750      | 0         | 0                         |
| Saudi Arabia  | 12,000                          | 0          | 11,650     | 350       | 0                         |
| Malaysia      | 11,920                          | 6,200      | 4,920      | 800       | 0                         |
| North Korea   | 10,252                          | 4,500      | 3,502      | 0         | 2,250                     |
| Poland        | 10,011                          | 5,001      | 5,010      | 0         | 0                         |
| Thailand      | 9,285                           | 0          | 8,555      | 730       | 0                         |
| Algeria       | 8,690                           | 0          | 8,690      | 0         | 0                         |
| Belgium       | 8,200                           | 5,200      | 3,000      | 0         | 0                         |
| Argentina     | 7,871                           | 3,501      | 4,370      | 0         | 0                         |
| Austria       | 7,570                           | 7,570      | 0          | 0         | 0                         |
| Netherlands   | 7,500                           | 7,500      | 0          | 0         | 0                         |
| Kazakhstan    | 6,000                           | 6,000      | 0          | 0         | 0                         |

| Country/Area           | Total Operating Capacity (ttpa) | BOF (ttpa) | EAF (ttpa) | IF (ttpa) | Other/ Unspecified (ttpa) |
|------------------------|---------------------------------|------------|------------|-----------|---------------------------|
| United Kingdom         | 6,000                           | 4,500      | 1,500      | 0         | 0                         |
| Australia              | 5,930                           | 4,400      | 1,530      | 0         | 0                         |
| Bangladesh             | 5,171                           | 0          | 3,040      | 2,131     | 0                         |
| United Arab Emirates   | 5,100                           | 0          | 4,500      | 600       | 0                         |
| Sweden                 | 4,813                           | 3,800      | 1,013      | 0         | 0                         |
| South Africa           | 4,810                           | 3,360      | 1,450      | 0         | 0                         |
| Slovakia               | 4,500                           | 4,500      | 0          | 0         | 0                         |
| Finland                | 4,375                           | 2,600      | 1,775      | 0         | 0                         |
| Philippines            | 4,100                           | 2,000      | 2,100      | 0         | 0                         |
| Morocco                | 3,320                           | 0          | 3,320      | 0         | 0                         |
| Oman                   | 3,200                           | 0          | 3,200      | 0         | 0                         |
| Iraq                   | 3,180                           | 0          | 3,180      | 0         | 0                         |
| Greece                 | 3,150                           | 0          | 3,150      | 0         | 0                         |
| Belarus                | 3,000                           | 0          | 3,000      | 0         | 0                         |
| Qatar                  | 2,900                           | 0          | 2,900      | 0         | 0                         |
| Czech Republic         | 2,800                           | 2,600      | 200        | 0         | 0                         |
| Serbia                 | 2,699                           | 2,199      | 500        | 0         | 0                         |
| Luxembourg             | 2,600                           | 0          | 2,600      | 0         | 0                         |
| Pakistan               | 2,498                           | 0          | 450        | 2,048     | 0                         |
| Syria                  | 2,400                           | 0          | 2,400      | 0         | 0                         |
| Peru                   | 2,000                           | 0          | 2,000      | 0         | 0                         |
| Bosnia and Herzegovina | 1,940                           | 1,140      | 800        | 0         | 0                         |
| Libya                  | 1,710                           | 0          | 1,710      | 0         | 0                         |
| Portugal               | 1,700                           | 0          | 1,700      | 0         | 0                         |
| Bulgaria               | 1,400                           | 0          | 1,400      | 0         | 0                         |
| Switzerland            | 1,370                           | 0          | 1,370      | 0         | 0                         |
| Romania                | 1,335                           | 0          | 1,335      | 0         | 0                         |
| Bahrain                | 1,300                           | 0          | 1,300      | 0         | 0                         |
| Kuwait                 | 1,200                           | 0          | 1,200      | 0         | 0                         |
| Uzbekistan             | 1,100                           | 0          | 1,100      | 0         | 0                         |
| Venezuela              | 1,020                           | 0          | 1,020      | 0         | 0                         |
| Kenya                  | 1,000                           | 1,000      | 0          | 0         | 0                         |
| Azerbaijan             | 800                             | 0          | 800        | 0         | 0                         |
| Ghana                  | 800                             | 0          | 800        | 0         | 0                         |

| Country/Area    | Total Operating Capacity (ttpa) | BOF (ttpa)       | EAF (ttpa)     | IF (ttpa)     | Other/ Unspecified (ttpa) |
|-----------------|---------------------------------|------------------|----------------|---------------|---------------------------|
| Norway          | 770                             | 0                | 770            | 0             | 0                         |
| Singapore       | 750                             | 0                | 750            | 0             | 0                         |
| Slovenia        | 726                             | 0                | 726            | 0             | 0                         |
| New Zealand     | 670                             | 670              | 0              | 0             | 0                         |
| Nigeria         | 600                             | 0                | 600            | 0             | 0                         |
| Uganda          | 600                             | 0                | 600            | 0             | 0                         |
| Zimbabwe        | 600                             | 0                | 600            | 0             | 0                         |
| North Macedonia | 550                             | 0                | 550            | 0             | 0                         |
| Chile           | 520                             | 0                | 520            | 0             | 0                         |
| Angola          | 500                             | 0                | 0              | 500           | 0                         |
| Guatemala       | 500                             | 0                | 500            | 0             | 0                         |
| Myanmar         | 400                             | 0                | 400            | 0             | 0                         |
| Bolivia         | 200                             | 0                | 200            | 0             | 0                         |
| Tunisia         | 200                             | 0                | 200            | 0             | 0                         |
| <b>World</b>    | <b>2,216,357</b>                | <b>1,440,698</b> | <b>726,888</b> | <b>27,469</b> | <b>21,302</b>             |

## Appendix D: Operating ironmaking capacity by country/area and production process

| Country/Area           | Total Operating Capacity (t/tpa) | BF (t/tpa) | DRI (t/tpa) | Other/ Unspecified (t/tpa) |
|------------------------|----------------------------------|------------|-------------|----------------------------|
| Algeria                | 8,000                            | 0          | 8,000       | 0                          |
| Angola                 | 96                               | 96         | 0           | 0                          |
| Argentina              | 5,575                            | 4,015      | 1,560       | 0                          |
| Australia              | 4,200                            | 4,200      | 0           | 0                          |
| Austria                | 6,651                            | 6,650      | 1           | 0                          |
| Bahrain                | 1,700                            | 0          | 1,700       | 0                          |
| Belgium                | 5,000                            | 5,000      | 0           | 0                          |
| Bolivia                | 250                              | 0          | 250         | 0                          |
| Bosnia and Herzegovina | 1,100                            | 1,100      | 0           | 0                          |
| Brazil                 | 33,636                           | 33,636     | 0           | 0                          |
| Canada                 | 6,979                            | 5,329      | 1,650       | 0                          |
| China                  | 917,546                          | 910,509    | 2,410       | 4,627                      |
| Czech Republic         | 2,263                            | 2,263      | 0           | 0                          |
| Egypt                  | 8,020                            | 0          | 8,020       | 0                          |
| Finland                | 2,600                            | 2,600      | 0           | 0                          |
| France                 | 7,900                            | 7,900      | 0           | 0                          |
| Germany                | 32,587                           | 31,987     | 600         | 0                          |
| India                  | 158,516                          | 118,566    | 36,550      | 3,400                      |
| Indonesia              | 10,560                           | 10,560     | 0           | 0                          |
| Iran                   | 60,909                           | 5,265      | 55,644      | 0                          |
| Italy                  | 4,000                            | 4,000      | 0           | 0                          |
| Japan                  | 80,384                           | 79,608     | 776         | 0                          |
| Kazakhstan             | 6,450                            | 6,450      | 0           | 0                          |
| Kenya                  | 500                              | 500        | 0           | 0                          |
| Libya                  | 1,806                            | 0          | 1,806       | 0                          |
| Malaysia               | 7,300                            | 6,400      | 900         | 0                          |
| Mexico                 | 7,312                            | 1,452      | 5,860       | 0                          |
| Namibia                | 1,000                            | 0          | 1,000       | 0                          |
| Netherlands            | 6,500                            | 6,500      | 0           | 0                          |
| New Zealand            | 652                              | 0          | 652         | 0                          |

| Country/Area         | Total Operating Capacity (ttpa) | BF (ttpa)        | DRI (ttpa)     | Other/ Unspecified (ttpa) |
|----------------------|---------------------------------|------------------|----------------|---------------------------|
| Nigeria              | 1,000                           | 0                | 1,000          | 0                         |
| North Korea          | 5,249                           | 5,249            | 0              | 0                         |
| Oman                 | 2,000                           | 0                | 2,000          | 0                         |
| Philippines          | 1,790                           | 1,790            | 0              | 0                         |
| Poland               | 2,300                           | 2,300            | 0              | 0                         |
| Qatar                | 2,500                           | 0                | 2,500          | 0                         |
| Russia               | 70,135                          | 62,355           | 7,780          | 0                         |
| Saudi Arabia         | 6,700                           | 0                | 6,700          | 0                         |
| Serbia               | 1,300                           | 1,300            | 0              | 0                         |
| Slovakia             | 4,500                           | 4,500            | 0              | 0                         |
| South Africa         | 4,604                           | 3,200            | 1,404          | 0                         |
| South Korea          | 54,399                          | 50,090           | 9              | 4,300                     |
| Spain                | 2,500                           | 2,500            | 0              | 0                         |
| Sweden               | 4,114                           | 4,105            | 9              | 0                         |
| Syria                | 300                             | 300              | 0              | 0                         |
| Taiwan               | 16,020                          | 16,020           | 0              | 0                         |
| Trinidad and Tobago  | 2,000                           | 0                | 2,000          | 0                         |
| Türkiye              | 15,195                          | 15,195           | 0              | 0                         |
| Uganda               | 600                             | 0                | 600            | 0                         |
| Ukraine              | 19,941                          | 19,941           | 0              | 0                         |
| United Arab Emirates | 4,200                           | 0                | 4,200          | 0                         |
| United Kingdom       | 3,000                           | 3,000            | 0              | 0                         |
| United States        | 29,985                          | 23,325           | 6,660          | 0                         |
| Venezuela            | 6,310                           | 0                | 6,310          | 0                         |
| Vietnam              | 22,570                          | 22,320           | 250            | 0                         |
| Zimbabwe             | 600                             | 600              | 0              | 0                         |
| <b>World</b>         | <b>1,673,804</b>                | <b>1,492,676</b> | <b>168,801</b> | <b>12,327</b>             |

## Appendix E: Steel capacity under development by technology type

### Basic oxygen furnace

| Country/Area   | Announced BOF capacity (t/tpa) | BOF capacity under construction (t/tpa) | Total BOF capacity under development (t/tpa) |
|----------------|--------------------------------|---|--|
| India          | 196,442                        | 15,992                                  | 212,434                                      |
| China          | 44,565                         | 23,005                                  | 67,570                                       |
| Indonesia      | 21,000                         | 0                                       | 21,000                                       |
| Vietnam        | 14,000                         | 500                                     | 14,500                                       |
| Malaysia       | 11,600                         | 0                                       | 11,600                                       |
| Myanmar        | 4,000                          | 0                                       | 4,000  |
| Iran           | 2,280                          | 0                                       | 2,280  |
| Czech Republic | 1,300                          | 0                                       | 1,300  |
| Nigeria        | 0                              | 1,300                                   | 1,300  |
| Russia         | 1,141                          | 0                                       | 1,141  |
| Uganda         | 1,000                          | 0                                       | 1,000  |
| Kazakhstan     | 818                            | 0                                       | 818  |
| Sri Lanka      | 0                              | 600                                     | 600  |
| Brazil         | 500                            | 0                                       | 500  |
| <b>World</b>   | <b>298,646</b>                 | <b>41,397</b>                           | <b>340,043</b>                               |

### Electric arc furnace

| Country/Area  | Announced EAF capacity (t/tpa) | EAF capacity under construction (t/tpa) | Total EAF capacity under development (t/tpa) |
|---------------|--------------------------------|---|--|
| Iran          | 32,120                         | 15,813                                  | 47,933                                       |
| China         | 19,470                         | 23,897                                  | 43,367                                       |
| India         | 37,130                         | 3,244                                   | 40,374                                       |
| Saudi Arabia  | 20,100                         | 630                                     | 20,730                                       |
| Vietnam       | 12,900                         | 3,310                                   | 16,210                                       |
| Germany       | 12,350                         | 1,900                                   | 14,250                                       |
| Türkiye       | 10,150                         | 2,000                                   | 12,150                                       |
| United States | 7,700                          | 3,740                                   | 11,440                                       |
| Italy         | 8,080                          | 3,000                                   | 11,080                                       |
| Philippines   | 6,500                          | 3,300                                   | 9,800  |
| Sweden        | 2,500                          | 6,500                                   | 9,000  |
| Australia     | 7,500                          | 0                                       | 7,500  |

| Country/Area   | Announced EAF capacity (t/tpa) | EAF capacity under construction (t/tpa) | Total EAF capacity under development (t/tpa) |
|----------------|--------------------------------|---|--|
| Netherlands    | 6,580                          | 0                                       | 6,580  |
| Mexico         | 1,500                          | 4,750                                   | 6,250  |
| Japan          | 6,000                          | 0                                       | 6,000  |
| South Korea    | 3,500                          | 2,500                                   | 6,000  |
| Romania        | 5,300                          | 300                                     | 5,600  |
| Russia         | 1,470                          | 4,030                                   | 5,500  |
| France         | 5,450                          | 0                                       | 5,450  |
| Kazakhstan     | 4,200                          | 1,200                                   | 5,400  |
| Finland        | 5,100                          | 0                                       | 5,100  |
| Oman           | 0                              | 5,100                                   | 5,100  |
| Czech Republic | 1,300                          | 3,500                                   | 4,800  |
| United Kingdom | 1,330                          | 3,200                                   | 4,530  |
| Namibia        | 0                              | 4,500                                   | 4,500  |
| Algeria        | 4,400                          | 0                                       | 4,400  |
| Canada         | 2,400                          | 1,850                                   | 4,250  |
| Spain          | 2,600                          | 1,100                                   | 3,700  |
| Bangladesh     | 0                              | 3,650                                   | 3,650  |
| Austria        | 0                              | 3,300                                   | 3,300  |
| Nigeria        | 3,000                          | 0                                       | 3,000  |
| Libya          | 2,700                          | 0                                       | 2,700  |
| Uzbekistan     | 1,500                          | 1,040                                   | 2,540  |
| Thailand       | 2,500                          | 0                                       | 2,500  |
| Egypt          | 2,000                          | 0                                       | 2,000  |
| Brazil         | 1,100                          | 700                                     | 1,800  |
| South Africa   | 1,700                          | 0                                       | 1,700  |
| Taiwan         | 1,500                          | 0                                       | 1,500  |
| Pakistan       | 1,280                          | 0                                       | 1,280  |
| Indonesia      | 1,200                          | 0                                       | 1,200  |
| Zimbabwe       | 1,200                          | 0                                       | 1,200  |
| Albania        | 1,000                          | 0                                       | 1,000  |
| Angola         | 1,000                          | 0                                       | 1,000  |
| Hong Kong      | 700                            | 0                                       | 700  |
| New Zealand    | 0                              | 650                                     | 650  |
| Malaysia       | 500                            | 0                                       | 500  |

| Country/Area | Announced EAF capacity (t/tpa) | EAF capacity under construction (t/tpa) | Total EAF capacity under development (t/tpa) |
|--------------|--------------------------------|---|--|
| Bolivia      | 500                            | 0                                       | 500  |
| Mozambique   | 0                              | 500                                     | 500  |
| Tunisia      | 400                            | 0                                       | 400  |
| <b>World</b> | <b>251,410</b>                 | <b>109,204</b>                          | <b>360,614</b>                               |

## Induction furnace

| Country/Area | Announced IF capacity (t/tpa) | IF capacity under construction (t/tpa) | Total IF capacity under development (t/tpa) |
|--------------|-------------------------------|--|---|
| India        | 17,594                        | 2,064                                  | 19,658                                      |
| Pakistan     | 183                           | 500                                    | 683   |
| Malaysia     | 500                           | 0                                      | 500   |
| <b>World</b> | <b>18,277</b>                 | <b>2,564</b>                           | <b>20,841</b>                               |

## Appendix F: Iron capacity under development by technology type

### Blast furnace

| Country/Area | Announced BF capacity (tpa) | BF capacity under construction (tpa) | Total BF capacity under development (tpa) |
|--------------|-----------------------------|--------------------------------------|---|
| India        | 183,363                     | 9,000                                | 192,363                                   |
| China        | 46,671                      | 35,968                               | 82,639                                    |
| Malaysia     | 6,600                       | 5,000                                | 11,600                                    |
| Vietnam      | 7,800                       | 580                                  | 8,380                                     |
| Zimbabwe     | 5,270                       | 0                                    | 5,270                                     |
| Pakistan     | 4,500                       | 0                                    | 4,500                                     |
| Myanmar      | 4,000                       | 0                                    | 4,000                                     |
| Russia       | 3,700                       | 0                                    | 3,700                                     |
| Indonesia    | 3,000                       | 0                                    | 3,000                                     |
| Nigeria      | 0                           | 1,355                                | 1,355                                     |
| Uganda       | 1,000                       | 0                                    | 1,000                                     |
| Kazakhstan   | 728                         | 0                                    | 728                                       |
| Angola       | 423                         | 0                                    | 423                                       |
| <b>World</b> | <b>267,055</b>              | <b>51,903</b>                        | <b>318,958</b>                            |

### Direct reduced iron

| Country/area | Announced DRI capacity (tpa) | DRI capacity under construction (tpa) | Total DRI capacity under development (tpa) |
|--------------|------------------------------|---------------------------------------|--|
| India        | 33,352                       | 4,490                                 | 37,842                                     |
| Iran         | 14,970                       | 21,580                                | 36,550                                     |
| Australia    | 30,000                       | 0                                     | 30,000                                     |
| Oman         | 7,500                        | 4,750                                 | 12,250                                     |
| Libya        | 8,000                        | 2,500                                 | 10,500                                     |
| Russia       | 4,460                        | 5,480                                 | 9,940                                      |
| Malaysia     | 7,000                        | 2,500                                 | 9,500                                      |
| Saudi Arabia | 7,500                        | 0                                     | 7,500                                      |
| Germany      | 5,100                        | 2,100                                 | 7,200                                      |
| South Korea  | 6,800                        | 262                                   | 7,062                                      |
| Kazakhstan   | 7,000                        | 0                                     | 7,000                                      |
| Sweden       | 4,800                        | 2,100                                 | 6,900                                      |
| Netherlands  | 5,655                        | 0                                     | 5,655                                      |
| Algeria      | 4,500                        | 0                                     | 4,500                                      |

| Country/area  | Announced DRI capacity (tpa) | DRI capacity under construction (tpa) | Total DRI capacity under development (tpa) |
|---------------|------------------------------|---------------------------------------|--|
| Spain         | 4,300                        | 0                                     | 4,300                                      |
| United States | 4,300                        | 0                                     | 4,300                                      |
| Finland       | 4,000                        | 0                                     | 4,000                                      |
| France        | 4,000                        | 0                                     | 4,000                                      |
| Uzbekistan    | 0                            | 3,600                                 | 3,600                                      |
| China         | 3,100                        | 0                                     | 3,100                                      |
| Canada        | 2,500                        | 0                                     | 2,500                                      |
| Egypt         | 2,500                        | 0                                     | 2,500                                      |
| Italy         | 2,500                        | 0                                     | 2,500                                      |
| Romania       | 2,500                        | 0                                     | 2,500                                      |
| Thailand      | 2,500                        | 0                                     | 2,500                                      |
| Bangladesh    | 2,200                        | 0                                     | 2,200                                      |
| Mexico        | 0                            | 2,100                                 | 2,100                                      |
| Azerbaijan    | 2,000                        | 0                                     | 2,000                                      |
| Iraq          | 2,000                        | 0                                     | 2,000                                      |
| Angola        | 1,200                        | 0                                     | 1,200                                      |
| Mozambique    | 0                            | 1,100                                 | 1,100                                      |
| Myanmar       | 0                            | 950                                   | 950  |
| Austria       | 0                            | 26                                    | 26   |
| <b>World</b>  | <b>186,237</b>               | <b>53,538</b>                         | <b>239,775</b>                             |