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Latest developments in steelmaking capacity and outlook until 2026

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Executive Summary

- **Steel excess capacity is set to become increasingly problematic in the coming years.** Investments in new steelmaking capacity are continuing to be made at a rapid pace while global steel demand remains sluggish, and the sector's profitability has slipped to the unsustainably low levels recorded in 2014/15, when the last steel crisis began. World crude steelmaking capacity in 2023 is now estimated at 2 432 million tonnes (mmt), exceeding global steel production by 543 mmt. Despite a downward revision stemming from the postponement of investment projects, previously scheduled to start towards the end of 2023, and positive news on closures that has been announced recently, steel excess capacity is set to grow increasingly problematic.
- Over the last five years, global steel capacity increased by almost 62 mmt. Regional developments show **significant capacity growth in the Association of Southeast Asian Nations (ASEAN) and the Middle East,** while the two largest steel producing economies, the People's Republic of China (hereafter "China") and India, which currently account for 47% and 6% of world capacity respectively, also contributed to the expansion. Capacity across the OECD area as a whole declined, as expansions in some regions such as North America and Türkiye were more than offset by declines in some European Union (EU) Members States and Japan.
- **The problem of excess capacity is expected to become even more acute in the future.** Global steelmaking capacity is projected to increase significantly over the next three years (2024-2026), with 68 mmt of capacity additions underway and an additional 89 mmt in the planning stage. At the current sluggish pace of global steel demand growth, at an annual clip of 1.9%, steel demand is increasing by only around 36 mmt per year. In the last steel crisis, low profitability and low prices for steel products led to a record number of trade remedy measures. Strategic planning for the future of steel demand, alignment with climate change objectives and the impact of trade are essential to ensure market stability.
- **Chinese steel companies continue to invest heavily overseas, particularly in ASEAN and other parts of Asia, as well as in Africa, while the outlook for Chinese demand remains weak.** ASEAN attracts 82% of total investment by Chinese firms abroad, as Chinese steel companies shift their investment activities from the home market to regions with better demand growth prospects. Chinese firms play a large role in the global steel industry's foreign investment in steel plants. Capacity expansions by Chinese companies abroad, through cross-border investment, account for 62% of world total cross-border investment in new steelmaking capacity taking place around the world.
- **The investment data show clear signs of a shift towards the green transition, but significant differences exist between regions.** Of the new investments announced over the next three years, more than half are now in the relatively lower emitting electric-arc furnace (EAF) plants, while 42% are in blast furnace/basic oxygen furnace (BF/BOF) plants. Most of the new investments in Asia involve traditional BF/BOF plants. Other regions are seeing capacity increases based almost entirely on electric-arc furnaces. Given the long life of steelmaking plants and to ensure profitability for the sustainable development of the steel industry, it is important to have concrete plans for new investments that are consistent with the

mid- and long-term climate change policies of the economy hosting the investment. Going forward, the Steel Committee should monitor new capacities closely, with a view to encouraging replacements of older, higher-emitting capacities to avoid net increases in capacity and CO2 emissions.

1. Introduction

This report provides an in-depth analysis of recent steelmaking capacity developments taking place around the world, while offering a regional and global capacity outlook for the period 2024 to 2026. The report includes data updates and information from news reports and press releases of individual steel companies, extending until end-December 2023. The insights drawn from this report can help policymakers and stakeholders better assess potential risks that can impact global steel market conditions in the medium to longer term.

Indeed, in the context of significant excess capacity in the global steel industry, it is important to closely monitor *net* capacity changes, including new investments and steel plant closures, in order to understand the current situation and emerging risks that may impact the industry in the future. This includes general capacity trends, but also the technologies being invested in and the extent to which the investments are replacements of older technologies, given the need to decarbonise steel production in the years ahead.

The data presented in this report indicate that investments in new capacity continue to advance at a robust pace in several regions, particularly in Asia where most of the new investments involve traditional BF/BOF plants. Other regions are also seeing increases in capacity, though at a more moderate pace and with a focus almost entirely on EAF. In the future, the Secretariat aims to enhance its capacity monitoring work to take into account breakthrough and other new technologies used for making steel.

This report also provides important data and explanations for the reader in the annexes. Annex A and B present detailed tables with data on each capacity expansion and closure by project. Annex C provides a table that shows the level of steelmaking capacity (in mmt) by country/economy and region, while Annex D contains a table with data on the gap between global steelmaking capacity and production since 2010. Annex E describes the working definitions used throughout this report.

2. Latest updates on steelmaking capacity

2.1 Global summary

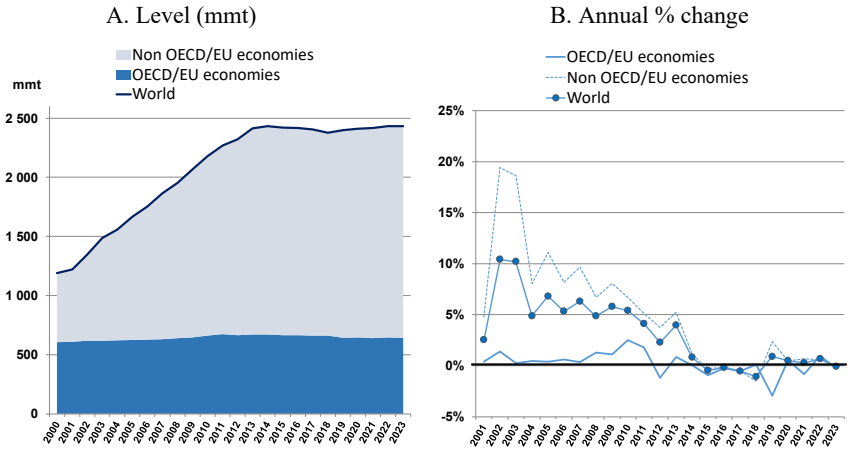
Global steel market conditions remain challenging, with the latest forecasts suggesting sustained sluggish demand growth (worldsteel, 2023[1]). According to the Secretariat's latest available information on capacity (as of end-December 2023), global steelmaking capacity remained high at 2,432.0 mmt in 2023, a level that exceeded global demand by almost 500 mmt. At this level, global excess capacity exceeded the level of global steel exports (282 mmt) by almost 80% in 2023.

When monitoring capacity developments, it is important to regularly assess two broad trends. First, net capacity should be declining to alleviate the global excess capacity problem, or, in the very least, any increases in net capacity should not exceed the growth of steel demand. At the same time, signals should emerge over time indicating that the technology break-down of capacity is clearly moving towards technologies with a relatively lower carbon footprint, that is, away from plants with the highest emitting profiles.

Considering these trends, the data show some progress regarding the composition of future capacity, with most of the new capacity investments taking place in relatively lower-emitting technologies. On the other hand, overall capacity is increasing in net terms, with the pace of this growth exceeding global steel demand growth, thus heightening the risks of oversupply in the medium term. In this context, it is becoming increasingly urgent to consider ways to limit net capacity growth globally to secure the future viability of the steel industry.

To summarize recent developments, after several years of gradual decline following the previous capacity peak of 2014, global crude steelmaking capacity started to increase in 2019, with growth continuing until 2022, and then stabilizing at 2,432.0 mmt in 2023 (Figure 1). These data represent net increases, as noted above, rather than gross increases, and thus take into account the latest information on new capacity additions and closures.

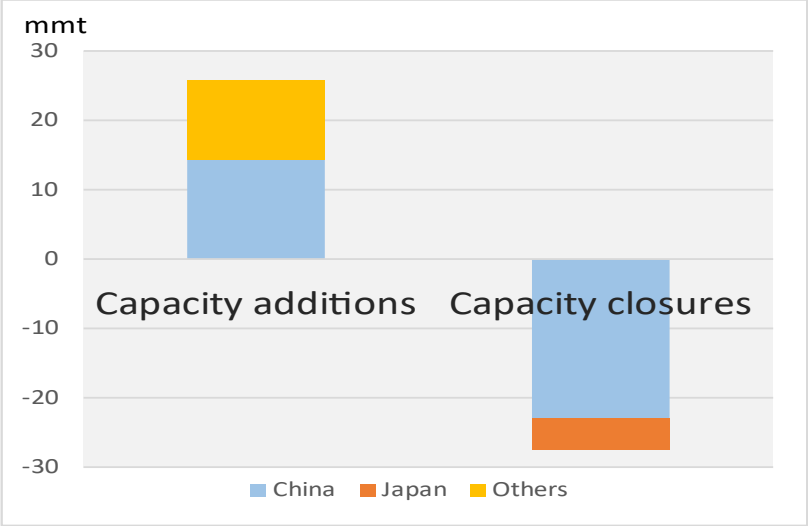
Figure 1. Evolution of crude steelmaking capacity in OECD and non-OECD economies



Note: Capacity data are in net terms (taking into account capacity additions and closures) and reflect information available up to December 2023.
Source: OECD

Figure 2 shows the capacity additions and closures in 2023. As shown in the figure, there was a marginal global capacity decline in net terms that year, as China and Japan implemented a significant amount of closures that exceeded gross additions in China and elsewhere. However, the global net reduction is only marginal, as China added new capacity that amounted to around 60% of its reductions.

Figure 2. Steelmaking capacity additions and closures in 2023



Source: OECD

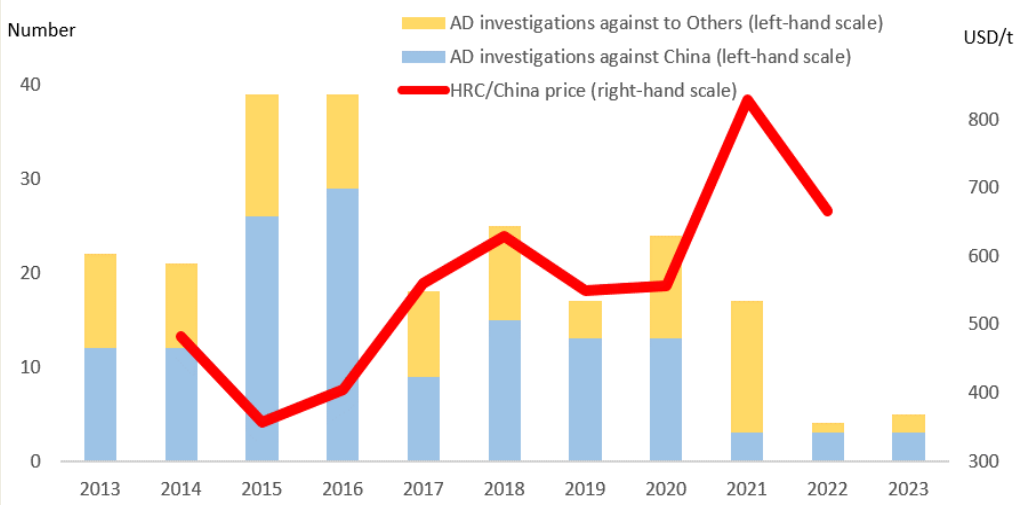
Box 1. Low profitability suggests excess capacity problems remain high in the steel industry

Profitability indicators suggest that the excess capacity problem remains very significant.

Figure 3 and Figure 4 show that around the time of 2014/15 steel crisis, hot-rolled coil prices reached historically low levels, a record number of anti-dumping investigations were initiated, and operating profitability reached its lowest level in a decade. Today, new trade cases are lower than during the previous crisis, but profitability has plummeted to levels similar to that time. This may reflect higher energy costs and the fact that trade policies are developing in different ways, including to address carbon issue in addition to unfair trade.

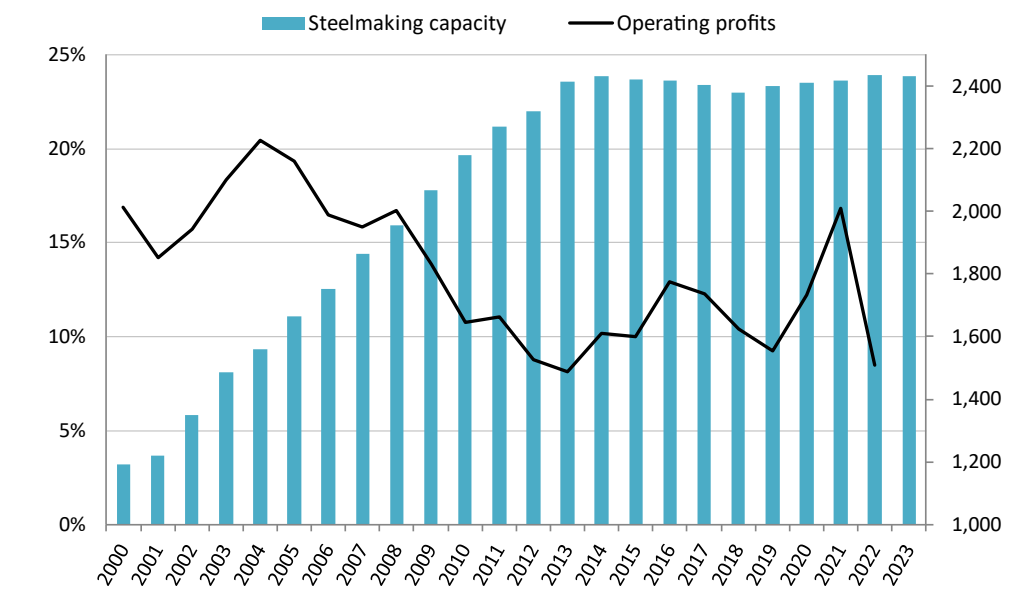
Past trends suggest some decoupling between capacity and operating profitability. With capacity in 2023 still at the same level as in 2022, the downward trend in profitability is a cause for concern.

Figure 3. Number of initiations of AD investigations against steel products and Chinese HRC price



Source: OECD calculations based on data from The Japan Iron and Steel Federation for AD investigations and Kallanish for steel price information (HRC / China FOT Warehouse)

Figure 4. Evolution of Steelmaking capacity and operating profits (industry average)



Note: Operating profitability is defined as EBITDA (earnings before interest, taxes, depreciation and amortisation) to sales revenue in per cent.
Source: OECD for the capacity and OECD calculations based on data from LSEG

2.2 Regional capacity developments

Regional developments since 2018, when steelmaking capacity temporarily bottomed as the work of the Global Forum on Steel Excess Capacity accelerated, show some important trends.

Table 1 shows that between 2018 and 2023, world steelmaking capacity increased by 54.0 mmt (+2.3%) to 2 432.0 mmt. The OECD region recorded a slight decrease of 16.8 mmt (-2.5%) to 644.4 mmt, while the non-OECD region recorded an increase of 70.9 mmt (+4.1%) to 1 787.5 mmt. As a result, the non-OECD region currently accounts for 73.5% of world capacity, a trend that has been increasing over the last two decades.

Looking at the growth rates by region, ASEAN (+18.8%, +13.1 mmt) and the Middle East (+25.6%, +19.1 mmt) contributed the most to the increase in capacity. China's growth rate maybe low. However, its capacity volume increase is comparable to that of the Middle East region.

Table 1. Steelmaking capacity development by region (mmt)

	2018	2019	2020	2021	2022	2023	2018vs 2023(%)	2018vs 2023(volume)
Africa	43.3	44.6	44.7	43.5	45.8	46.9	8.3%	3.6
Asia	1,584.6	1,616.5	1,622.5	1622.6	1626.1	1618.7	2.1%	34.0
China	1,122.9	1,148.3	1,147.9	1146.5	1149.9	1141.5	1.7%	18.6
India	127.0	128.7	128.7	133.9	133.9	136.9	7.8%	9.9
ASEAN	69.8	74.6	78.7	80.4	80.4	82.9	18.8%	13.1
CIS	141.9	143.4	142.6	143.9	145.0	145.0	2.2%	3.1
Europe	295.3	279.6	279.7	280.3	281.5	283.7	-3.9%	-11.5
EU	218.7	208.2	205.6	205.6	205.6	205.7	-6.0%	-13.0
Other Europe	76.6	71.4	74.1	74.7	75.9	78.1	1.9%	1.5
Latin America	78.2	73.9	73.4	73.9	73.9	74.2	-5.1%	-4.0
Middle East	74.8	80.7	84.1	89.0	92.3	93.9	25.6%	19.1
North America	157.9	154.2	157.5	157.7	162.8	163.3	3.4%	5.4
Oceania	6.4	6.4	6.4	6.4	6.4	6.4	0.0%	0.0
OECD/EU economies Total	661.3	641.9	645.3	640.0	646.3	644.4	-2.5%	-16.8
non-OECD/EU economies Total	1,716.7	1,757.3	1,765.5	1777.3	1787.4	1787.5	4.1%	70.9
World Total	2,377.9	2,399.2	2,410.8	2417.4	2433.7	2432.0	2.3%	54.0

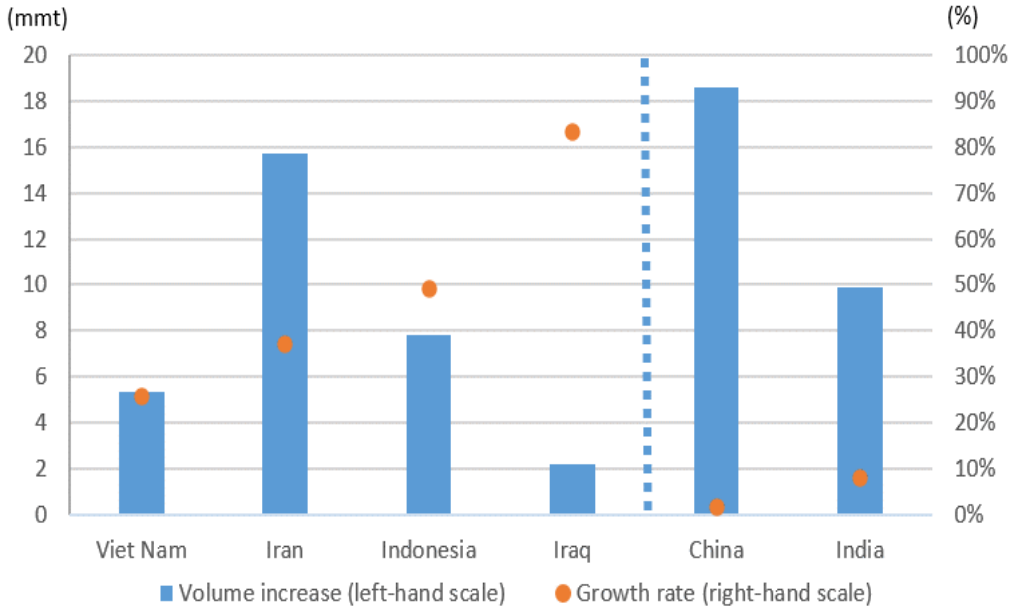
Note: The capacity data reflect information up to December 2023. The table "Europe" includes both OECD/EU economies and non OECD/EU economies in Europe, as well as Türkiye. Please see Annex C for detailed capacity data by individual economies. Figures for the European Union (EU) include all EU Member States.
Source: OECD

While much of the focus on capacity is on the major players, it is also important to monitor developments in smaller steel-producing economies that are growing rapidly. Figure 5 shows a selection of economies from each region with the highest growth rates between 2018 and 2023 (among producers with capacity of more than 3 mmt), and compares them with the major players (China and India).

In ASEAN, Indonesia (+49.1%, +7.8 mmt) and Viet Nam (+25.6%, +5.3 mmt) are the only economies in the region to increase capacity. Capacity growth in Indonesia in 2023 and beyond is expected to be driven by cross-border investment. Looking at trade data for steel export volumes, neither economy is ranked among the top 20 exporters in 2018. However, Indonesia and Viet Nam were ranked 15th and 18th respectively in 2022 and could become significant exporters if steel demand growth underperforms capacity growth over the next few years.

In the Middle East, Iran (+37.1%, +15.7 mmt) has added almost as much capacity over the last five years as Egypt, which has the largest capacity in Africa. Capacity expansion in Iran is expected to continue with 83 new projects planned for 2023 and beyond, the largest number in the world. Iraq (+83.4%, +2.2 mmt) is still small in terms of volume growth. However, due to its higher growth rate than other economies in the region, Iraq now has the same capacity as the United Arab Emirates, the third largest economy in the region.

Figure 5. Economies with highest steel capacity growth between 2018 and 2023



Source: OECD

Much of these capacity expansions reflect the economic development taking place in the relevant economies. Indeed, the rapid expansion of capacity is a regular feature of economic development and industrialisation, particularly in economies that have traditionally been net importers of steel. Historically, net importing countries tend to embark on policy pathways aimed at becoming more self-sufficient in crude steel production.

However, there is a concern that in some of the economies shown in Figure 5, the demand for steel in the respective regions has not necessarily increased in proportion to the increase in capacity over the last 10-year period.

In order to ensure healthy steel market conditions, it is becoming increasingly important to distinguish capacity growth to meet the needs of economic development including the replacement of imports and domestic demand from other types of capacity expansion, particularly export-oriented capacity. Capacity growth in excess of demand conditions has a negative impact on the steel industry through falling prices and weak profitability. Indeed, investors in new steel plants should carefully consider the long-term viability of the plants.

2.3 The gap between global capacity and production

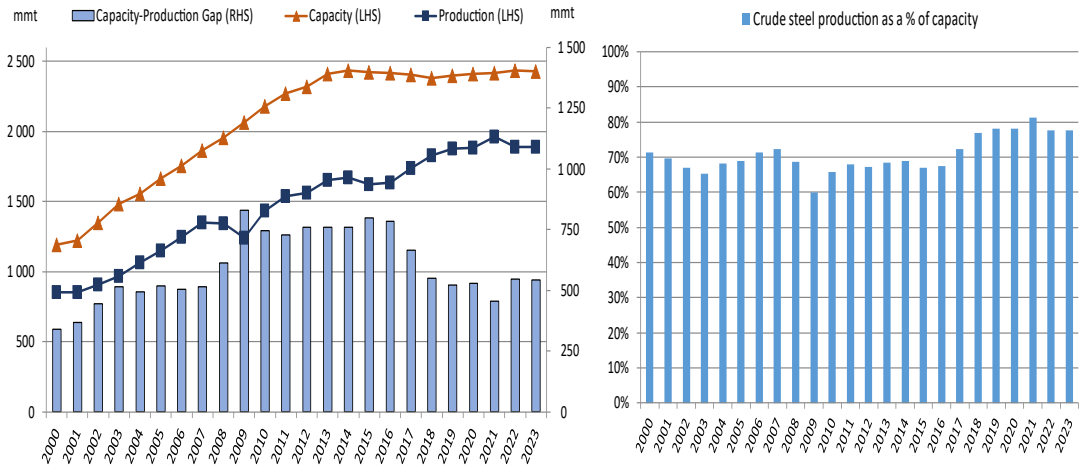
The trends in recent years indicate that some decoupling may be taking place between capacity and production.

Compared to the last steel crisis in 2015, the gap between capacity and production has narrowed slightly, but operating profits are at the same level as during the steel crisis, as shown in Box 1. As an energy-intensive industry, the profitability of the steel industry is naturally affected by the price of energy and raw materials, as well as the additional costs associated with decarbonisation, such as CAPEX, OPEX and R&D. However, the fact that profitability is so low

suggests that excess capacity is still significant, despite being slightly lower than in 2015.

For the sustainable development of the steel industry, it is important that plans for new capacity are in line with realistic demand prospects for steel products, and that additional capacity does not take resources from the steel industry that are needed for decarbonisation.

Figure 6. Global crude steelmaking capacity, crude steel production and capacity utilisation rate



Note: Capacity data reflect information up to December 2023.
Source: OECD for crude steelmaking capacity and World Steel Association for crude steel production

2.4 Future capacity developments

Table 2 and Figure 7 show the expected future development of capacity by region up to 2026. When looking at future capacity additions, the OECD classifies investment projects as "underway" (and thus likely to be completed during the projection period) or "planned" (which are less certain but could still come on stream). Projects that are underway are those that are already under construction or for which equipment contracts have been awarded and a major financial or state commitment has been made. Planned projects, on the other hand, are more uncertain because they are either at the feasibility or early planning stage, have not yet received financial or government support, or are not scheduled for completion at a specific date.

Information on announced investment projects indicates that 68.3 mmt of gross capacity additions are currently underway worldwide and are therefore expected to come on stream during the next three-year period 2024-26. A further 88.7 mmt of capacity additions are currently in the planning stage for possible commissioning during the same period.

Recent capacity developments reflect decarbonisation objectives and have not all been focussed on increasing capacity. For example, some steel producers have been shutting down BF-BOFs and replacing them with EAFs with lower capacity. It is hoped that greater awareness of the excess capacity problem, through the work of the both the Steel Committee and Global Forum on Steel

Excess Capacity, may encourage steel makers to align their investments with decarbonisation goals but also with realistic demand prospects, thus helping to address both CO2 emissions and global excess steelmaking capacity (see Annex A and B for the supporting data).

Examining regional capacity developments, Asia will continue to see significant increases in steelmaking capacity in volume terms over the next three years, assuming that all ongoing projects are eventually realised (and not offset by closures). The region currently has a total of 31.4 (+1.9%) mmt of capacity additions underway for commissioning in 2024-26, with a further 55.6 mmt (+5.4%) in the planning stage. ASEAN and India are projected to account for 88.9% of Asia's steelmaking capacity additions.

Of the capacity additions in ASEAN, 74.6% are related to investments by Chinese companies, either cross-border investments or joint venture (JV) investments. Indeed, and as noted earlier, while no major new capacity additions are expected in China over the next three years, Chinese companies are contributing to growth outside the economy.

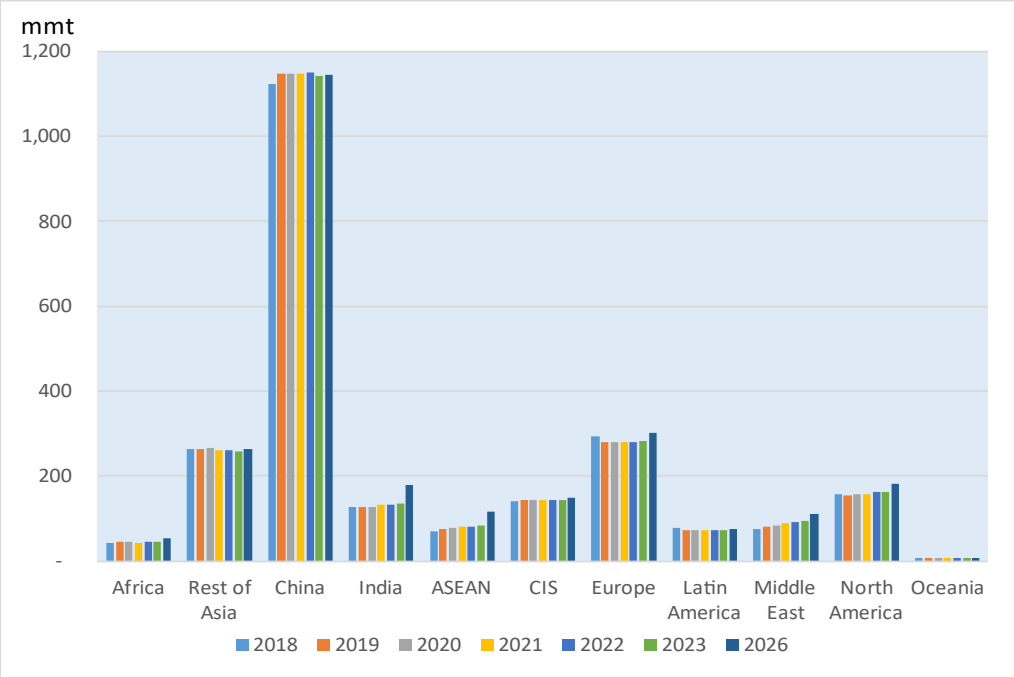
In other regions, steelmaking capacity additions are expected to increase over the next three years as follows: an increase of 7.1 mmt (+15.1%) in Africa, 4.9 mmt (+3.4%) in the Commonwealth of Independent States (CIS), 6.8 mmt (+3.3%) in the European Union, 1.0 mmt (+1.3%) in Latin America, 18.0 mmt (+19.2%) in the Middle East, 17.9 mmt (+11.0%) in North America, and 1.5 mmt (+23.5%) in Oceania.

Table 2. Current nominal capacity and potential gross capacity additions by region

	Nominal capacity (mmt)	Nominal capacity (mmt)	% change	Potential gross capacity additions 2024-26 (mmt)			Capacity in 2026 (mmt)		% change expected (2023 vs 2026)	
	2022	2023 (A)	2023-2022	Underway (B)	Planned (C)	(B)+(C)	Low (A)+(B)	High (A)+(B)+(C)	Low	High
Africa	45.8	46.9	2.3	3.9	3.2	7.1	50.8	54.0	8.3	15.1
Asia	1626.1	1618.7	-0.5	31.4	55.6	87.0	1650.1	1705.7	1.9	5.4
China	1149.9	1141.5	-0.7	1.5	2.3	3.8	1143.0	1145.3	0.1	0.3
India	133.9	136.9	2.2	5.7	37.7	43.4	142.6	180.3	4.2	31.7
ASEAN	80.4	82.9	3.1	21.8	12.1	33.9	104.7	116.8	26.3	40.9
CIS	145.0	145.0	0.0	2.8	2.1	4.9	147.8	149.9	1.9	3.4
Europe	281.5	283.7	0.8	5.2	14.4	19.6	288.9	303.3	1.8	6.9
EU	205.6	205.7	0.0	3.6	3.2	6.8	209.3	212.5	1.8	3.3
Other Europe	75.9	78.1	2.9	1.6	11.2	12.8	79.7	90.9	2.0	16.4
Latin America	73.9	74.2	0.3	1.0	0.0	1.0	75.2	75.2	1.3	1.3
Middle East	92.3	93.9	1.7	11.4	6.6	18.0	105.3	111.9	12.1	19.2
North America	162.8	163.3	0.3	11.1	6.8	17.9	174.4	181.2	6.8	11.0
Oceania	6.4	6.4	0.0	1.5	0.0	1.5	7.9	7.9	23.5	23.5
OECD/EU economies Total	646.3	644.4	-0.3	20.5	24.7	45.2	664.9	689.6	3.2	7.0
non-OECD/EU economies Total	1787.4	1787.5	0.0	47.8	64.0	111.8	1835.3	1899.3	2.7	6.3
World Total	2433.7	2432.0	-0.1	68.3	88.7	157.0	2500.3	2589.0	2.8	6.5

Note: The capacity data reflect information up to December 2023. The table "Europe" includes both OECD/EU economies and non OECD/EU economies in Europe, as well as Türkiye. Figures for the EU include all EU Member States. Estimates regarding steelmaking capacity in 2026 and expected percentage changes are based on gross additions only; as such, the actual capacity levels will be affected by closures that may occur during the period.
Source: OECD

Figure 7. Steelmaking capacity outlook by region: level of crude steel capacity by year



Note: The capacity data reflect information up to December 2023. "Europe" includes both OECD/EU economies and non OECD/EU economies in Europe, as well as Türkiye. Estimates regarding steelmaking capacity in 2026 are based on gross additions only; as such, the actual capacity levels will be affected by closures that may occur during the period.
Source: OECD

It is important to take into account regional steel demand considerations when assessing capacity developments around the world because of the impact on trade between regions, as noted above. Rapid growth in capacity and steel production can lead to trade disruptions if local demand conditions are less robust than expected.

Table 3 shows the potential gross capacity additions by region and by type of equipment from 2024 to 2026. Of the world total of 157.0 mmt of capacity currently underway or in the planning stages for completion over the next three years, BOF projects account for 41.5% of the total while EAF projects account for 54.5% of the total. The remaining projects, where the technology is unknown, account for 4.0% of the total.

Table 3. Potential gross capacity additions by region and equipment type from 2024 to 2026 (mmt)

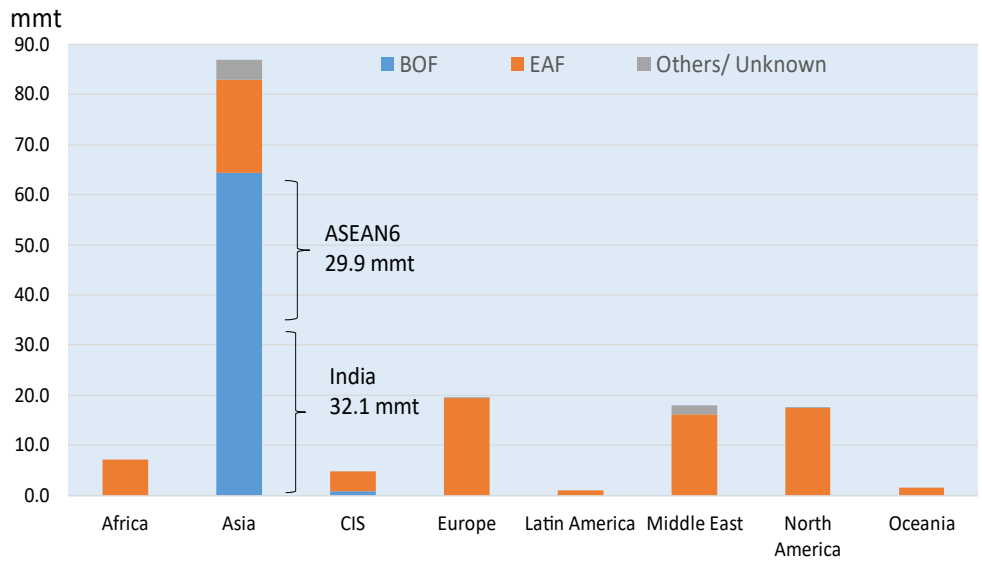
	2024			2025			2026			Total in 2024-2026			% Share in 2024-2026		
	BOF	EAF	Others/ Unknown	BOF	EAF	Others/ Unknown	BOF	EAF	Others/ Unknown	BOF	EAF	Others/ Unknown	BOF	EAF	Others/ Unknown
Africa		4.9			2.2					0.0	7.1	0.0	0.0	100.0	0.0
Asia	39.6	4.6	0.4	22.9	14.1		1.8		3.5	64.3	18.7	3.9	74.0	21.5	4.5
CIS		2.2			1.9		0.8			0.8	4.1	0.0	16.3	83.7	0.0
Europe		4.3	0.2		8.6			6.5		0.0	19.4	0.2	0.0	99.0	1.0
EU		0.7						2.5		0.0	3.2	0.0	0.0	100.0	0.0
Other Europe		3.6	0.2					4.0		0.0	7.6	0.2	0.0	97.4	2.6
Latin America		1.0								0.0	1.0	0.0	0.0	100.0	0.0
Middle East		9.7	0.4		1.5	1.4		5.0		0.0	16.2	1.8	0.0	90.0	10.0
North America		8.6			2.3	0.3		6.5		0.0	17.4	0.3	0.0	98.3	1.7
Oceania					1.5					0.0	1.5	0.0	0.0	100.0	0.0
Total	39.6	35.3	1.0	22.9	32.1	1.7	2.6	18.0	3.5	65.1	85.4	6.2	41.5	54.5	4.0

Note: The capacity data are in mmt and contain both underway and planned projects, and do not take into account possible closures that may occur during the period.
Source: OECD

As can be seen in Figure 8, regional investment trends differ considerably in terms of technology. In Asia, BOF plants account for more than 74.0% of the tonnage volume of capacity additions. Most of the BOF installations will take place in India or ASEAN.

In contrast, investments elsewhere mostly involve the EAF production route, with no new BOF plants expected to start operations in Africa, Europe, Latin America, the Middle East, North America and Oceania during 2024-26. The reader is referred to Annex A for details of individual projects.

Figure 8. Potential gross capacity additions by region and equipment type from 2024 to 2026 (mmt)



Note: The capacity data contain both underway and planned projects, and do not take into account possible closures that may occur during the period.
Source: Metal Expert, Platts, Kallanish, and steel company website

Box 2. Transition to low-carbon steelmaking

Given that 40% of new capacity additions are BOF, and that the average age of BOF is 60 years (OECD, 2023[2]), new investments need to consider not only the demand and supply side, but also climate change objectives, including the adoption of Best Available Technologies (BAT) to improve energy efficiency and reduce CO2 emissions in the shorter term. Retrofitting, breakthrough technologies, and substitution/reduction of raw material use will be longer-term solutions for the industry. Innovative solutions to lower emissions from steel production have and will continue to emerge over time, particularly if market forces and profit incentives are allowed to thrive, while problems such as global excess capacity, unfair trade practices, and distortive government interventions are significantly reduced.

As an example of concrete actions for the shorter term, the Indian steel industry has adopted certain BAT to improve energy efficiency and reduce greenhouse gas emissions, resulting in a significant reduction in specific CO2 emissions from around 3.1 tonnes (t) per tonne of crude steel (tcs) in 2005 to 2.5 t/tcs in 2020 (Ministry of Steel in India, 2021[3]). One possible reason why India's average CO2 emissions intensity is higher than the global average of worldsteel is that, despite a relatively high share of EAF (45%), EAF is produced using coal-based DRI and/or coal-based electricity. As the industry aims for expansion, there is a strong interest in adopting BAT practices. Leveraging technology-sharing platforms could empower Indian companies to enhance energy efficiency and reduce their carbon footprint during expansion efforts. The World Steel Association has highlighted that, on the road to the deployment of breakthrough technologies, short and medium-term process efficiency gains will provide important CO2 emission reductions as well as the increased use of scrap in EAF and Blast Furnaces to reduce CO2 intensity. Indeed, scrap plays a key role in reducing industrial emissions and resource consumption (worldsteel, 2021[4]). For economies such as India, with historically low steel consumption, the availability of domestic scrap is limited and there is a significant reliance on imports from other economies. Therefore, open market trade in scrap is also necessary in the context of decarbonisation.

In terms of long-term solutions, there are a number of new projects aimed at reducing CO2 emissions from existing steelmaking processes. In Belgium, ArcelorMittal has started the first use of bio-coal in the blast furnace, which will reduce the plant's CO2 emissions by 3% by reducing the use of traditional coal in the BF, and Europe's first carbon capture and utilisation. In Japan, Kobe Steel has successfully demonstrated a technology by feeding a large amount of Hot Briquetted Iron (HBI) into the BF and reducing coke input to 230 kilograms/tonne of hot metal output. Kobe Steel highlighted that it can reduce CO2 emissions in the blast furnace by 25%, which would be one of the highest CO2 reduction effects in the world (Kallanish, 2023[5]).

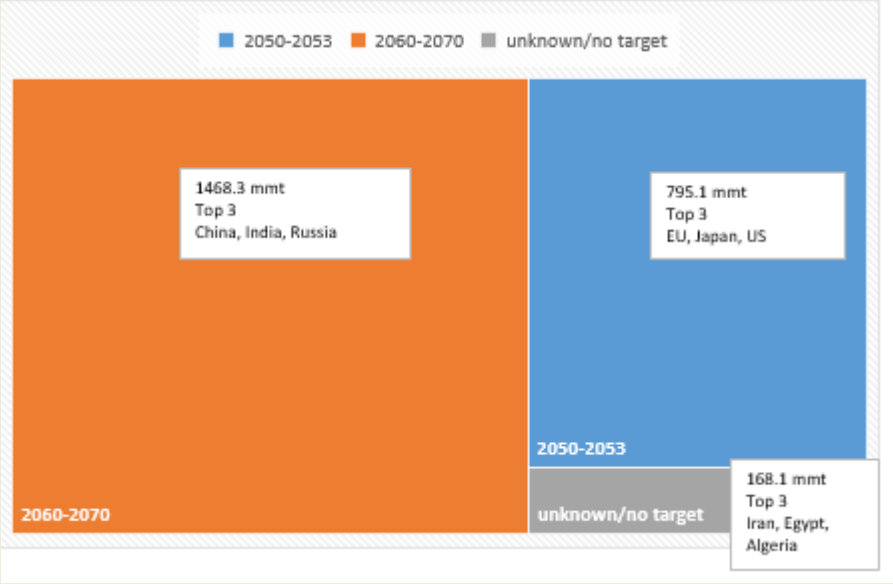
The current supply of DRI including HBI in the global market is still insufficient, but several projects have been announced, mainly in the Middle East and North Africa region (Kallanish, 2023[6]). JFE Steel, the second largest steel producer in Japan, has announced plans to use carbon-neutral direct reduced iron in EAFs, which will enable it to maintain product quality while reducing CO2 emissions as part of its carbon-neutrality plan (Kallanish, 2023[7]).

With around 89% of BF-BOF's energy input coming from coal and 7% from electricity (worldsteel, 2021[8]), decarbonising the process is a challenge not only in terms of raw materials, but also in terms of switching to low-carbon energy at an affordable price. Given that around 24% (five-year average) of steel products are traded internationally, the steel industry is highly exposed to international markets and therefore needs to remain competitive and agile, and not burdened by the harmful impacts of global excess capacity and unfair trading practices.

Making the transition to low-carbon energy through business initiatives alone is challenging. For example, the share of low-carbon or renewable electricity in an economy varies, and the price also depends on the availability of indigenous resources or reliance on external sources, as the 2022 energy crisis shows (IEA, 2023[9]). This could lead some steelmakers to slow down the transformation of the steelmaking process from BOF to EAF, if energy prices remain high and/or renewable energy supplies remain insufficient (Kallanish, 2023[10]).

Crude steel production processes vary widely around the world, to meet society's different demands for quantity and quality of steel products, and reflecting the varying availability and cost of energy and raw materials (including scrap) (OECD, 2023[11]). However, with most economies having set net-zero targets that vary by economy (Figure 9) and company, and given the long lifespan of steel plants, it is important to have concrete plans that take into account not only steel supply and demand, but also climate change targets. Indeed, the majority of companies that have announced the relining of existing blast furnaces in 2023 have indicated that these activities nevertheless align with their own climate change targets (Kallanish, 2023[12]).

Figure 9. Current total steelmaking capacity by net zero target year

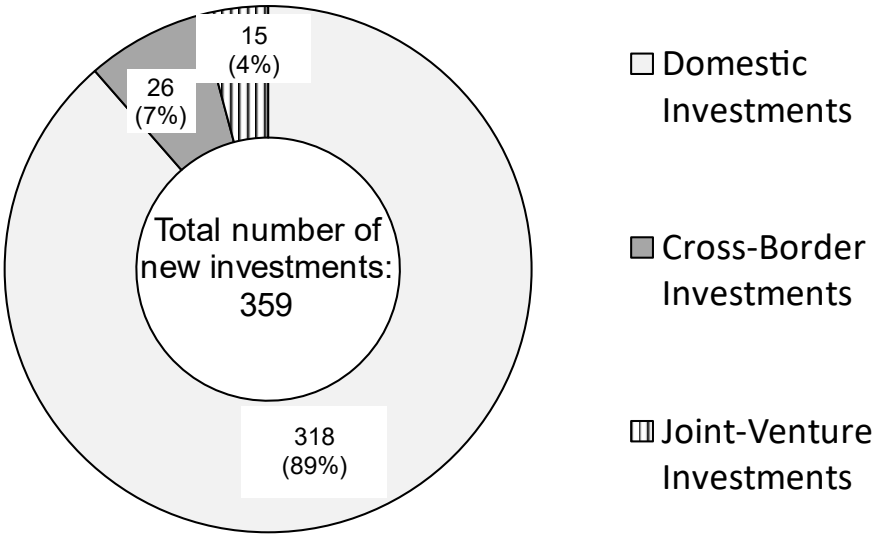


Note: Some EU members have a net zero target before 2050, but these were included in the EU.
Source: OECD

3. Latest updates on cross-border investment

Figure 10 shows the share of domestic and cross-border investment in steelmaking capacity. In total, there are 361 new steelmaking capacity projects worldwide, classified as either underway or planned, which are scheduled to become operational in 2023 or later. This broad figure includes projects that have already started operations in 2023, as well as projects for which the start date is not available. Of these projects, domestic steelmakers are the investors/owners in 318 (89%) of the cases. Of the remaining steelmaking capacity projects, 26 (7%) entail cross-border investments, representing an investment that is based entirely on one or more foreign investors/owners, and 15 (4%) are structured as joint ventures (JV) between domestic and foreign investors/owners.

Figure 10. The share of domestic and cross-border investments in new steelmaking capacity projects starting in 2023 or later



Note: This figure includes all new investment projects that are underway or planned, and which are scheduled to become operational in 2023 or later — including projects that have started operation in 2023, as well as projects for which the start date is not available. It does not include cancelled projects. A cross-border investment represents an investment that is based wholly on one or several foreign investors/owners. A joint venture, on the other hand, involves both foreign investors/owners and domestic counterparts. Please see Annex A for details on the plant-level investments and their respective investors/owners.
Source: OECD

Table 4 shows the cross-border investment by region. Asia is the largest investment destination, with 14 cross-border and 11 JV investments between domestic and foreign investors. Africa is attracting four cross-border and four JV investments. The Middle East is the destination of two cross-border investments, with a focus on low-carbon steel production using green energy. North America is the destination of six cross-border investments. There are currently no cross-border or JV investments in the CIS, Europe, Latin America and Oceania regions.

Table 4. Domestic and cross-border investments in new steelmaking capacity projects starting in 2023 or later

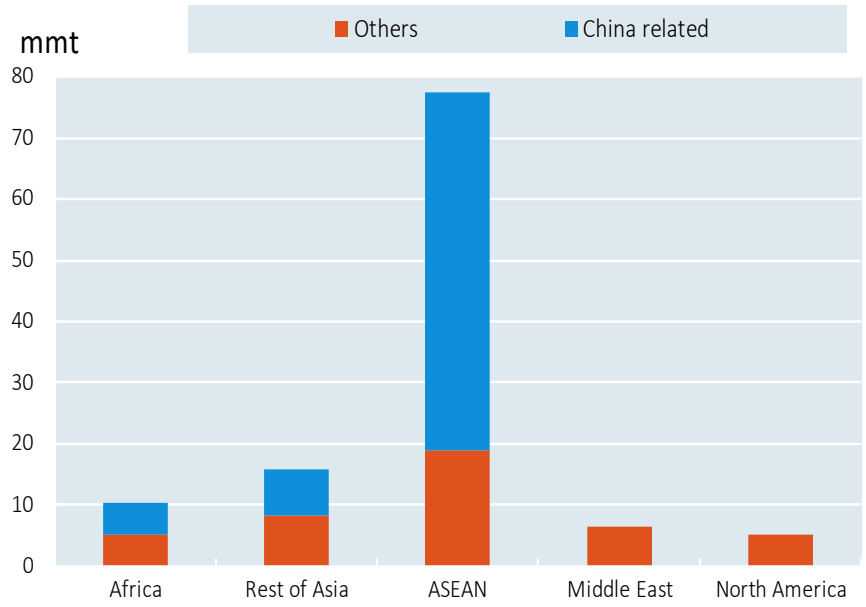
Region where the investment is taking place	Domestic Investments		Cross-Border Investments		Joint-Venture Investments	
	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)
Africa	11	7.2	4	5.2	4	5.2
Asia	143	290.1	14	71.3	11	22.0
CIS	17	17.7	0	0.0	0	0.0
Europe	27	29.9	0	0.0	0	0.0
Latin America	6	3.0	0	0.0	0	0.0
Middle East	97	89.4	2	6.5	0	0.0
North America	15	16.6	6	5.2	0	0.0
Oceania	2	1.5	0	0.0	0	0.0
World Total	318	455.4	26	88.2	15	27.2

Note: This table includes all new investment projects that are, underway or planned, and which are scheduled to become operational in 2023 or later — including projects that have started operation in 2023, as well as projects for which the start date is not available. It does not include cancelled projects. A cross-border investment represents an investment that is based wholly on one or several foreign investors. A joint venture, on the other hand, involves both a foreign investor and a domestic counterpart. Please see Annex A for details on the plant-level investments and their respective investors/owners.
Source: OECD

Of the cross-border investments or JV investments, 61.8% of the new investments in 2023 or later will be made by Chinese steel companies in third economies. When all the plants that Chinese companies invest in are in operation from 2023 onwards, this will amount to 71 mmt, which is comparable in size to the capacity of Latin America.

Figure 11 shows a breakdown of the amount of new cross-border investment in third economies involving Chinese and other economies. Chinese companies have investment plans concentrated in Asia and Africa. In particular, ASEAN receives the largest share of Chinese investment, accounting for 82.1% of total Chinese investment in steel in third economies.

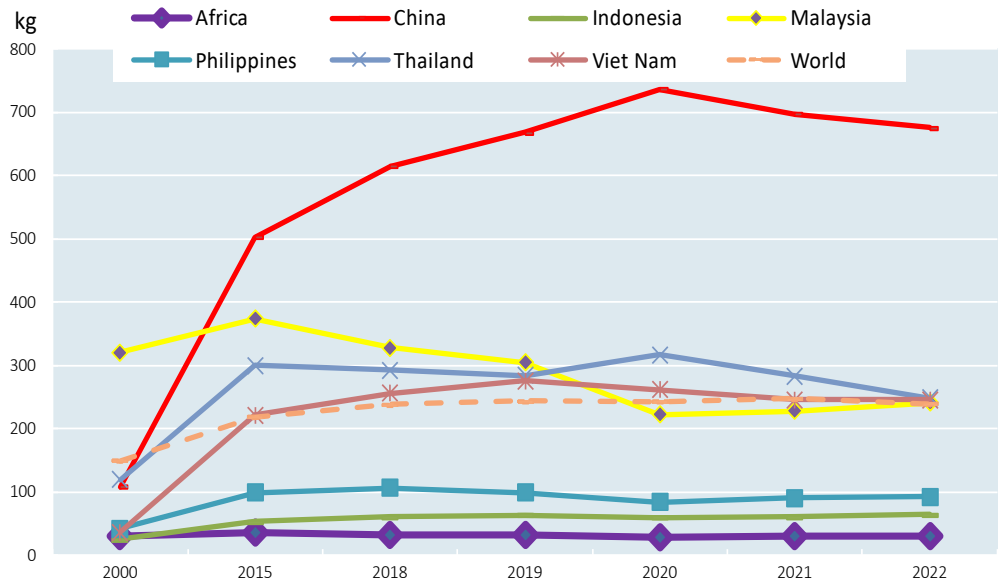
Figure 11. Cross-border investment in new steelmaking capacity by Chinese and other companies starting in 2023 or later (mmt)



Source: OECD

China's apparent steel consumption (crude steel basis) was 964 mmt in 2022, and the China Iron and Steel Association (CISA) forecasts that it will fall to 910 mmt in 2025, 860 mmt in 2030 and 820 mmt in 2035 (Kallanish, 2023[13]). In terms of steel consumption per capita, Figure 12 shows that Chinese demand has grown significantly over the last two decades, peaking in 2020. On the other hand, Chinese companies are investing in Africa and ASEAN, where steel consumption is still below the world per capita average, meaning that there is potential for future growth in steel consumption. The implication is that as steel demand in China peaks, steelmaking capacity in China is expected to decline in line with demand, but this investment will be shifted to the potential economies of Africa and ASEAN.

Figure 12. Apparent steel use per capita (kg crude steel equivalent)



Source: worldsteel

Given the length of time it takes for steel companies to recoup their initial investment, foreign investment in an uncertain environment requires careful consideration of other factors in addition to steel demand, including competition with local steel producers, impacts on labour, alignment with the climate change objectives of the investing economy, and impacts on trade.

4. Conclusions

Global steelmaking capacity is expected to continue to grow at a rapid pace over the next few years, in the context of relatively weak steel market conditions. In the three-year period of 2024-26, the global steel industry will see an additional 68.3 mmt of capacity coming on stream, with a further 88.7mmt potentially being added according to announced plans by steel companies. In total, therefore, gross capacity additions could amount to 157.0 mmt worldwide between 2024 and 2026.

Excess capacity is a structural problem that continues to cloud the outlook for the global steel industry. Governments and industry stakeholders should ensure that capacity investments are driven by market considerations and, given the longevity of installed the steel plants, make sure that the investments will be sustainable in the long term, including from a climate change perspective. For example, the installation of very large carbon-intensive plants, as described in this report, or efforts to begin relining outdated furnaces without any climate change plans, raise questions about their economic and environmental viability, especially if demand conditions are less favourable than expected. Participants in the Steel Committee could consider ways to discourage new investments in such unsustainable facilities, domestically and those otherwise occurring via cross-border investments.

As the industry makes the transition to lower-carbon steel production, it will be important to carefully monitor the nature of the investments, notably if they are merely new additions or if they represent adaptation/replacement of existing facilities, as well as their impacts on net capacity changes. Often, there is little information about the capacity levels of new low-carbon investments, indicating the importance of building better information about such investments to enable careful monitoring of excess capacity.

The OECD Steel Committee will continue to address these issues and publish its findings twice a year. The aim is to raise public awareness of capacity trends and the emerging challenges associated with these trends.

Annex A. AVAILABLE INFORMATION ON PLANT LEVEL INVESTMENTS AND THEIR OWNERS

Table A A.1. Investment data

Highlighted blue rows indicate replacement of current capacity and not net capacity increases while highlighted green rows indicate partial replacement of current capacity or unclear to how much of the capacity will be an increase.

REGION	ECONOMIES	COMPANY	OWNER (ECONOMIES) except themselves	STATUS	START	EQUIPMENT	CAPACITY	SOURCES
Africa	Algeria	Emarat Dzayer Steel Company	Imetal Group (51%)	plan	?	EAF	?	Metal Expert
Africa	Algeria	Tosyali Holding		underway	2024	EAF	2000	Company HP (tenova)
Africa	Algeria	ETRHB	The ETRHB HADDAD Group	plan	?	EAF	1150	Company HP (Danieli); Metal Expert
Africa	Algeria	Algerian Qatari Steel Company	Qatar Steel International (49%)	plan	2025	EAF	2200	Company HP, Metal Expert
Africa	Algeria	SARL SFM		operating	2023	IF	200	Company HP, Metal Expert
Africa	Egypt	Arabian Steel Industries	Arabian Steel Industries	plan	2024	EAF	1000	Metal Expert, World Steel Capacities
Africa	Egypt	Xin Feng Resources Recycling Investment Holdings	Xin Feng Resources Recycling	plan	?	EAF	2000	Metal Expert

			Investment Holdings					
Africa	Egypt	Delta Steel Mill		operating	2023	IF	?	Company HP, Metal Expert
Africa	Egypt	EZZ Steel		operating	2023	EAF	850	Company HP, Metal Expert
Africa	Kenya	Sinosteel	Sinosteel	plan	?	Steelmaking	1000	Metal Expert; Ministry of Industry, Trade and Cooperatives of Kenya
Africa	Morocco	SONASID	ONA group	underway	2024	EAF	1000	Company HP, Metal Expert
Africa	Morocco	Soma Steel		underway	2024	EAF	300	Company HP, Metal Expert
Africa	Mozambique	Baobab Resources	Baobab Resources	underway	?	EAF	500	World Steel Capacities, WM, Company HP
Africa	Namibia	Groot Group	Groot Group	underway	?	EAF	1000	Company HP, Metal Expert
Africa	Nigeria	Ajaokuta Steel Company (ASC)	Ajaokuta Steel Company (ASC)	plan	?	BOF	1300	World Steel Capacities; CompanyHP
Africa	Nigeria	Kam Industries		underway	?	IF	260	Metal Expert
Africa	South Africa	Scaw Metals Group		underway	2024	EAF	650	World Steel Capacities

Africa	Zimbabwe	Tsingshan Holding Group	Tsingshan Holding Group	underway	?	EAF	1200	kallanish
Africa	Zimbabwe	Tsingshan Holding Group	Tsingshan Holding Group	plan	?	EAF	1000	kallanish
Asia	Bangladesh	Bangladesh Steel Re-Rolling Mills (BSRM)		operating	2023	IF	?	Company HP, Metal Expert
Asia	Bangladesh	Bashundhara Multi Steel Industries Limited (BMSIL)		underway	2024	EAF	1250	Company HP, Metal Expert
Asia	Bangladesh	SHAHRIAR STEEL MILLS LTD. (SSRM)		underway	2024	IF	108	Company HP, Metal Expert
Asia	Bangladesh	Star Consortium		plan	?	BOF	2000	Company HP
Asia	Bhutan	Druk Metallurgy Limited (DML)	Druk Holding and Investments Limited (DHI)	underway	?	IF	200	Company HP, Platts
Asia	Cambodia	Cambodia Iron and Steel		plan	?	BOF	1000	WM
Asia	Cambodia	Xinjiang Bayi Nanjiang Steel Baicheng Co Ltd-Aksu	Baowu Steel Group Corporation	plan	?	BOF	3100	Reuters, My steel, SEAISI presentation
Asia	China	Shanxi Jinnan Iron and Steel	Shanxi Jinnan Iron and Steel	plan	?	BOF	3400	worldmetals
Asia	China	Anshan Iron & Steel	Ansteel Group	plan	?	Steelmaking	10000	Platts
Asia	China	Shaanxi Hanzhong Iron and Steel	Shaanxi Steel Group	plan	?	EAF	700	陕西发展观察，汉中时空网

Asia	China	Jinxi Iron and Steel	Jinxi Iron and Steel (河北津西钢铁集团)	plan	?	Steelmaking	?	防城港市新闻网
Asia	China	HBIS Laoting Steel Co., Ltd.	HBIS	plan	?	BOF	7470	Platts, Reuters, Company HP
Asia	China	Baowu Iron & Steel Group	Baowu Steel Group Corporation	plan	?	Steelmaking	?	MySteel (我的钢铁), Platts, Metal Expert, Government of Jinangsu
Asia	China	Baowu Iron & Steel Group	Baowu Iron & Steel Group	plan	?	Steelmaking	3100	Platts
Asia	China	Sanbao Iron and Steel		underway	2024	EAF	1500	Metal Expert, kallanish
Asia	China	Tangyin Iron and Steel		underway	?	BOF	2000	Metal Expert, kallanish
Asia	China	Zenith Iron and Steel Group		underway	?	BOF	5850	Metal Expert, kallanish
Asia	China	Rizhao Steel Holding Group Co., Ltd.		underway	?	BOF	2700	Metal Expert
Asia	China	Sichuan Dazhou Iron and Steel		plan	2024	BOF	2300	ME, kallanish
Asia	China	Luoyuan Minguang Steel		plan	?	BOF	1250	Metal Expert
Asia	China	Linyi Iron and Steel Investment Group Special Steel		underway	?	BOF	2700	Metal Expert
Asia	China	Rockcheck Iron and Steel		underway	?	EAF	500	Metal Expert

Asia	China	Tianzhu Iron and Steel		underway	?	BOF	2870	Metal Expert
Asia	China	Changli Hongxing Industry		underway	?	BOF	3450	Metal Expert
Asia	China	Xianfu Iron and Steel		underway	?	BOF	2600	Metal Expert
Asia	China	Jingye Iron and Steel		underway	?	BOF	1500	Metal Expert
Asia	China	Tongcai Industry and Trade		underway	?	BOF	2000	Metal Expert
Asia	China	Tongcai Industry and Trade		underway	?	EAF	780	Metal Expert
Asia	China	Shandong Iron and Steel Group		operating	2023	BOF	1150	Metal Expert
Asia	China	Shandong Iron and Steel Group		underway	?	BOF	1150	Metal Expert
Asia	China	Shandong Iron and Steel Group		underway	?	BOF	1150	Metal Expert
Asia	China	Jinan Iron and Steel Group		operating	2023	BOF	1800	Metal Expert
Asia	China	Yunnan Yuxi Iron and Steel Group		operating	2023	BOF	1300	Metal Expert
Asia	China	Yunnan Yuxi Iron and Steel Group		operating	2023	BOF	1300	Metal Expert
Asia	China	Yunnan Yuxi Iron and Steel Group		operating	2023	BOF	1400	Metal Expert
Asia	China	Yunnan Yuxi Iron and Steel Group		operating	2023	BOF	1150	Metal Expert
Asia	China	Fujian Sanbao Iron and Steel		operating	2023	EAF	787	Metal Expert
Asia	China	Baicheng Fuda Steel Bar Rolling		operating	2023	EAF	787	Metal Expert

Asia	China	Qian`an Jiujiang Wire		operating	2023	BOF	1600	Metal Expert
Asia	China	Qian`an Jiujiang Wire		operating	2023	BOF	1600	Metal Expert
Asia	China	Qian`an Jiujiang Wire		operating	2023	BOF	1600	Metal Expert
Asia	India	Tata Steel BSL Ltd.		plan	2030	BOF	6070	WM
Asia	India	Tata Steel BSL Ltd.		plan	2030	EAF	1550	WM
Asia	India	Tata Steel		plan	2024	BOF	5000	Metal Expert
Asia	India	Tata Steel		underway	2025	EAF	750	World Steel Capacities
Asia	India	JSW Steel Limited	JSW Holdings	underway	2024	BOF	5000	Company HP
Asia	India	JSW Steel Limited	JSW Holdings	plan	2026	BOF	1800	WM
Asia	India	JSW Steel Limited	JSW Holdings	plan	?	EAF	1200	WM
Asia	India	JSW Steel Limited	JSW Holdings	plan	?	EAF	?	Sarralle
Asia	India	NMDC	NMDC	operating	2023	BOF	3000	World Steel Capacities
Asia	India	Shree Uttam Steel and Power Ltd	Uttam Galva Steels Ltd(UGSL)	underway	?	BOF	1550	World Steel Capacities
Asia	India	Shree Uttam Steel and Power Ltd	Uttam Galva Steels Ltd(UGSL)	plan	?	BOF	1550	Metal Expert
Asia	India	Mono Steel (India) Ltd.		underway	?	IF	?	World Steel Capacities

Asia	India	Crest Steel (Una) Pvt. Ltd.	Crest Steel	plan	?	IF	?	Metal Expert, World Steel Capacities
Asia	India	Ramsarup Lohh Udyog Limited (RLUL)		plan	?	EAF	700	World Steel Capacities
Asia	India	Brand Steel and Power ltd		plan	2025	EAF	450	WM
Asia	India	Aloke Steel Industries		plan	2030	EAF	70	WM
Asia	India	Ankur Udyog Limited		plan	2032	EAF	250	WM
Asia	India	Texcon Steels Ltd		plan	2030	EAF	130	WM
Asia	India	Welspun Power and Steel Ltd (WPSL)		plan	2030	BOF	3100	WM
Asia	India	Welspun Power and Steel Ltd (WPSL)		plan	2030	BOF	3300	WM
Asia	India	Xindia Steels		plan	2036	BOF	2500	WM
Asia	India	Xindia Steels		plan	2029	BOF	2500	WM
Asia	India	Kalyani Steel		plan	2030	BOF	3000	WM
Asia	India	KIC Metaliks		plan	2025	EAF	380	WM
Asia	India	Knovus Steels and Infrastructure		plan	2030	EAF	150	WM
Asia	India	Rungta Mines Limited (RML)		plan	2030	EAF	110	WM
Asia	India	Tata Metaliks (TML)		plan	2038	BOF	3000	WM
Asia	India	Ramsarup Industries Limited		plan	?	EAF	700	WM

Asia	India	Jindal Steel and Power Ltd. (JSPL)	O.P. Jindal Group	plan	2034	BOF	6000	WM
Asia	India	Jindal Steel and Power Ltd. (JSPL)	O.P. Jindal Group	plan	2024	BOF	6000	WM
Asia	India	Jindal Steel and Power Ltd. (JSPL)		plan	?	BOF	2500	Metal Expert
Asia	India	Jindal Steel and Power Ltd. (JSPL)		plan	2025	EAF	3000	Metal Expert, Company HP, Platts
Asia	India	ArcelorMittal	ArcelorMittal	plan	?	Steelmaking	6000	Metal Expert, Company HP(Annual Report 2018)
Asia	India	Godawari Power and Ispat		plan	2025	BOF	1000	Metal Expert
Asia	India	Tata Steel		plan	2030	BOF	5500	WM
Asia	India	Tata Steel		plan	?	?	?	Metal Expert
Asia	India	Tata Sponge Iron Ltd		plan	?	BOF	1500	World Steel Capacities
Asia	India	Tata Sponge Iron Ltd		plan	2025	EAF	750	WM
Asia	India	BMM Ispat Limited		plan	?	BOF	1100	WM
Asia	India	ArcelorMittal Nippon Steel India		plan	2028	BOF	24000	World Steel Capacities, SEAISI
Asia	India	ArcelorMittal Nippon Steel India Limited		plan	2025	BOF	6000	World Steel Capacities
Asia	India	JSW Steel Limited		plan	2036	BOF	6000	WM
Asia	India	JSW Steel Limited		plan	2025	BOF	4000	WM

Asia	India	JSW Steel Limited		plan	2032	BOF	3440	WM
Asia	India	JSW Bengal Steel		plan	?	BOF	3000	World Steel Capacities
Asia	India	Jindal Maxsteel		plan	?	EAF	1500	World Steel Capacities
Asia	India	Jai Balaji Industries Limited (JBIL)		plan	2030	EAF	5000	WM
Asia	India	Jai Balaji Jyoti Steels		plan	2030	EAF	860	WM
Asia	India	Jindal Steel and Power Ltd. (JSPL)		plan	2025	BOF	3300	Metal Expert
Asia	India	Jindal Steel and Power Ltd. (JSPL)		plan	2025	EAF	3000	Metal Expert
Asia	India	Jindal Steel and Power Ltd. (JSPL)		plan	?	BOF	4000	WM
Asia	India	Neelachal Ispat Nigam Limited (NINL)		plan	?	BOF	1000	World Steel Capacities
Asia	India	NMDC		plan	2030	BOF	5000	WM
Asia	India	SAIL		plan	2035	BOF	8800	WM
Asia	India	SAIL		plan	2030	BOF	5600	WM
Asia	India	Bhushan Power and Steel Limited (BPSL)		plan	2023	BOF	2800	WM
Asia	India	Bhushan Power and Steel Limited (BPSL)		plan	?	EAF	900	WM
Asia	India	Bhushan Power and Steel Limited (BPSL)		plan	2030	EAF	3000	WM
Asia	India	Arjas Steel		plan	2030	BOF	620	WM

Asia	India	MSP Steel & Power Ltd (MSPSPL)		plan	2025	EAF	580	WM
Asia	India	MSP Metallics Ltd		plan	?	IF	240	World Steel Capacities
Asia	India	Visa Steel		plan	?	EAF	2500	WM
Asia	India	Shyam Steel Industries		plan	?	EAF	320	WM
Asia	India	Action Ispat & Power (P) Ltd.		plan	2024	EAF	680	WM
Asia	India	Chintpurni Steel		plan	?	EAF	300	WM
Asia	India	Ispat Damodar Ltd.		plan	2025	EAF	190	WM
Asia	India	Jhakhand Ispat Pvt Ltd		plan	2030	EAF	70	WM
Asia	India	Narbheram Power & Steel		plan	2030	EAF	670	WM
Asia	India	Prakash Industries		plan	2025	EAF	1000	WM
Asia	India	Rashmi Metaliks Limited (RML)		plan	?	EAF	350	WM
Asia	India	Rashi Steel and Power Limited (RSPL)		plan	2030	EAF	240	WM
Asia	India	Jayaswal Neco Industries Limited		plan	2025	EAF	570	WM
Asia	India	AP High Grade Steel	AP High Grade Steel	plan	?	BOF	2000	Metal Expert
Asia	India	Lloyds Metals and Energy		plan	?	IF	250	Metal Expert
Asia	India	Lloyds Metals and Energy		plan	2027	EAF	1200	Metal Expert, Company HP, Platts

Asia	India	Gallantt Group		plan	2024	IF	?	Metal Expert, Company HP, Platts
Asia	India	JSW Utkal Steel		plan	?	BOF	13200	Kallanish
Asia	Indonesia	Dexin Steel Indonesia	Delong Holdings (45%), Shanghai Decent Group (43%)	operating	2023	BOF	2500	Company HP, Metal Expert
Asia	Indonesia	Krakatau POSCO	POSCO (70%)	plan	2025	BOF	3000	SEAISI Presentation, Metal Expert. Company HP
Asia	Indonesia	PT Gunung Raja Paksi	Gunung Steel Group	plan	?	EAF	500	Platts, Metal Expert, Company HP
Asia	Indonesia	Anshan Iron & Steel Group Corporation	Anshan Iron & Steel Group Corporation	plan	?	Steelmaking	5000	Platts
Asia	Indonesia	Fuhai Group & Ansteel Group	Fuhai Group	plan	?	Steelmaking	1750	The Jakara Post
Asia	Indonesia	Hebel Bishi Steel Group	Hebel Bishi Steel Group	plan	?	Steelmaking	3000	Metal Expert, American Metal Market
Asia	Indonesia	PT Gunung Raja Paksi	Gunung Steel Group (GSG)	plan	?	Steelmaking	3000	Metal Expert
Asia	Indonesia	Shaanxi Iron and Steel Group	Shaanxi Iron and Steel Group	plan	?	Steelmaking	7500	Metal Expert, 陕西日报 (Shaanxi' Daily), China Belt

								and Road Portal (中国一带一路), 陕西煤业化工集团有限责任公司;
Asia	Indonesia	Wuhan Iron & Steel (Wugang)	Wuhan Iron & Steel (Wugang)	plan	?	EAF	5000	Platts
Japan	Japan	JFE Steel		plan	2027	EAF	2000	Company HP, Metal Expert
Asia	Japan	Chubu Steel Plate Co.		underway	2024	EAF	700	World Steel Capacities
Asia	Korea	Daehan Steel Co., Ltd.		plan	2025	EAF	1000	World Steel Capacities
Asia	Korea	POSCO		plan	2025	EAF	2500	World Steel Capacities
Asia	Myanmar	Myingyan plant		plan	?	EAF	200	World Steel Capacities
Asia	Myanmar	Kunming Steel	Kunming Iron and Steel Group Company (KISC)	plan	?	BOF	4000	Metal Expert
Asia	Malaysia	Eastern Steel Sdn Bhd	Hiap Teck Venture (HYVB) (55%)	underway	2024	BOF	1300	SEAISI
Asia	Malaysia	Kinsteel Bhd		plan	?	IF	500	Metal Expert, World Steel Capacities
Asia	Malaysia	Kinsteel Bhd		plan	?	EAF	500	Metal Expert

Asia	Malaysia	New project by The Lion Group	The Lion Group	plan	?	BOF	1600	World Steel Capacities
Asia	Malaysia	Sarawak Iron and Steel	Hebei Xinwuan Steel Group	underway	2024	BOF	10000	Metal Expert, SEAISI
Asia	Thailand	Meranti Green Steel	Meranti Steel	plan	2027	EAF	2000	Metal Expert, Company HP, Platts
Asia	Philippines	Philippine Iron and Steel Project	SteelAsia Manufacturing	plan	?	Steelmaking	4500	SEAISI
Asia	Philippines	Philippine Iron and Steel Project	SteelAsia Manufacturing	plan	2026	Steelmaking	3500	SEAISI
Asia	Philippines	Panhua Group	Panhua Group	underway	2024	BOF	10000	Metal Expert
Asia	Philippines	SteelAsia Manufacturing Corporation	SteelAsia Manufacturing	plan	?	EAF	500	Metal Expert
Asia	Philippines	SteelAsia Manufacturing Corporation	SteelAsia Manufacturing	plan	?	EAF	800	Metal Expert, Company HP, Platts
Asia	Philippines	SteelAsia Manufacturing Corporation	SteelAsia Manufacturing	underway	2024	EAF	500	Metal Expert
Asia	Philippines	SteelAsia Manufacturing Corporation	SteelAsia Manufacturing	plan	?	EAF	?	World Steel Capacities
Asia	Philippines	SteelAsia Manufacturing Corporation	SteelAsia Manufacturing	plan	?	EAF	800	Metal Expert
Asia	Philippines	SteelAsia Manufacturing Corporation	SteelAsia Manufacturing	plan	?	EAF	600	Metal Expert
Asia	Philippines	SteelAsia Manufacturing Corporation	SteelAsia Manufacturing	plan	?	EAF	1200	Metal Expert

Asia	Viet Nam	Formosa Plastics Group	Formosa Plastics Group	plan	?	BOF	7000	SEAISI
Asia	Viet Nam	Formosa Plastics Group	Formosa Plastics Group	plan	?	BOF	7000	SEAISI
Asia	Viet Nam	Hoa Sen Group	Hoa Sen Group	plan	?	EAF	800	World Steel Capacities
Asia	Viet Nam	Hoa Sen Group	Hoa Sen Group	plan	?	EAF	500	World Steel Capacities
Asia	Viet Nam	Vietnam Steel Corporation	Vietnam Steel Corporation (VSC)	plan	?	BOF	500	Metal Expert
Asia	Viet Nam	Viet - Trung Metallurgy Company	Vietnam Steel Corporation	plan	?	BOF	500	Company HP
Asia	Viet Nam	Hoa Phat Group		plan	2025	BOF	5600	World Steel Capacities
Asia	Pakistan	Ittehad Steel	Ittehad Steel	underway	?	IF	600	Metal Expert
Asia	Pakistan	Indus Consortium Mining & Steel Industry	Mughal Steel, Star Cotton Corporation, Pak Steel, Ittehad Steel Mills	plan	?	BOF	1000	World Steel Capacities
Asia	Pakistan	Naveena Steel Mills		plan	?	IF	80	Metal Expert
Asia	Pakistan	Century Steel	Fuzhou Julitaihe International Company	underway	?	?	500	Metal Expert
Asia	Pakistan	FF Steel		underway	?	IF	250	Metal Expert
Asia	Pakistan	FF Steel		plan	?	?	?	Metal Expert

Asia	Pakistan	Mughal Steel		operating	2023	IF	108	Metal Expert
Asia	Pakistan	Kamran Steel Re-Rolling Mills (Pvt) Ltd.		underway	?	IF	130	World Steel Capacities
Asia	Pakistan	Hunza Steel		underway	2024	IF	90	Company HP, Metal Expert
Asia	Pakistan	Hamza Steel		underway	2024	IF	300	Company HP, Metal Expert
CIS	Azerbaijan	Baku Steel Company	Baku Steel Company	plan	?	EAF	?	Company HP, Metal Expert
CIS	Russia	Usolye Metallurgical Plant		underway	?	Steelmaking	?	Metal Expert
CIS	Russia	Don-Metal	Don-Metal	plan	2025	EAF	160	Metal Expert, Comments from Russia
CIS	Russia	Hrombur		plan	?	EAF	500	Metal Expert
CIS	Russia	Ishstal plant		plan	?	EAF	300	World Steel Capacities
CIS	Russia	Don-Metal		plan	?	EAF	160	Metal Expert
CIS	Russia	United Metallurgical Company (OMK)		underway	2025	EAF	1800	Metal Expert
CIS	Russia	Novostal-M		plan	2024	EAF	1200	World Steel Capacities
CIS	Russia	Novostal		plan	?	EAF	1000	Company HP, Metal Expert
CIS	Russia	Surgutskiy MK		underway	?	EAF	100	Metal Expert

CIS	Russia	Rostov Electrometallurgical Plant / REMZ		underway	2024	EAF	1000	kallanish, Metal Expert
CIS	Russia	Metalloinvest		plan	?	EAF	1200	kallanish
CIS	Ukraine	Metinvest	Metinvest	plan	?	BOF	3200	World Steel Capacities, Platts
CIS	Ukraine	Metinvest	Metinvest	plan	2030	EAF	4500	Metal Expert
CIS	Ukraine	Donetsksteel		plan	?	EAF	1800	Platts, Metal Expert
CIS	Kazakhstan	QazSpecSteel		plan	2026	BOF	400	Metal Expert
CIS	Kazakhstan	QazSpecSteel		plan	2026	BOF	400	Metal Expert
Europe	Austria	Böhler Edelstahl Gmbh		underway	?	EAF	205	Company HP, Metal Expert
Europe	Austria	Voestalpine Stahl Donawitz		underway	2027	EAF	850	Company HP, Metal Expert
Europe	Austria	Voestalpine AG		underway	2027	EAF	850	Company HP, Metal Expert
Europe	Belgium	ArcelorMittal		plan	2026	EAF	?	World Steel Capacities
Europe	Germany	ArcelorMittal		plan	2026	EAF	?	World Steel Capacities
Europe	Italy	Acciaierie d'Italia		plan	?	EAF	?	Metal Expert,Platts
Europe	Italy	Acciaierie d'Italia		plan	?	EAF	?	Metal Expert,Platts

Europe	Netherlands	Van Merksteijn International	Van Merksteijn International	plan	?	EAF	1000	Danieli PR
Europe	Poland	Cognor Group	PS HoldCo Sp. z o.o.	operating	2023	EAF	120	Metal Expert
Europe	Romania	Galati Steelworks		plan	?	EAF	4000	Company HP
Europe	Romania	AFV Beltrame		plan	2024	EAF	700	World Steel Capacities
Europe	Sweden	H2 Green Steel		underway	2025	EAF	2500	Metal Expert, Company HP, World Steel Capacities
Europe	Sweden	SSAB Swedish Steel AB		underway	2026	EAF	?	Metal Expert, Company HP, World Steel Capacities
Europe	Spain	ArcelorMittal		underway	2025	EAF	1100	Company HP
Europe	Finland	Blastr Green Steel		plan	2026	EAF	2500	Company HP, Metal Expert
Europe	France	ArcelorMittal		plan	2027	EAF	?	Company HP
Europe	France	ArcelorMittal		plan	2027	EAF	?	Company HP
Europe	United Kingdom	Liberty House	Liberty House Group	plan	?	EAF	?	Company HP
Europe	United Kingdom	South Tees Development Corporation (STDC)		plan	?	EAF	?	Metal Expert
Europe	Türkiye	Izmir Demir Celik		underway	2024	EAF	1400	Metal Expert, kallanish

Europe	Türkiye	Kaptan Demir Celik		plan	2024	EAF	2000	World Steel Capacities
Europe	Türkiye	Ekinciler Demir Celik		plan	?	EAF	1000	World Steel Capacities
Europe	Türkiye	Icdas		plan	2025	EAF	5000	World Steel Capacities
Europe	Türkiye	Tufan Metalurji		plan	2024	IF	244	World Steel Capacities
Europe	Türkiye	Yildizlar Holding		plan	2026	EAF	4000	World Steel Capacities
Europe	Türkiye	Hascelik		underway	2024	EAF	250	Metal Expert, Company HP, World Steel Capacities
Middle East	Iran	Mobarakeh Steel	Morarakeh Steel (65%)	underway	2024	EAF	1000	World Steel Capacities
Middle East	Iran	Mobarakeh Steel Company		operating	2023	EAF	50	Metal Expert, Company HP, World Steel Capacities
Middle East	Iran	Khorasan Steel Complex		plan	?	EAF	1320	Metal Expert, Company HP, World Steel Capacities
Middle East	Iran	Khouzestan Oxin Steel		plan	?	EAF	1200	World Steel Capacities
Middle East	Iran	Khouzestan Steel		underway	2024	EAF	800	World Steel Capacities
Middle East	Iran	Esfahan Steel		plan	?	BOF	2280	World Steel Capacities

Middle East	Iran	Esfahan Steel		plan	?	EAF	1650	World Steel Capacities
Middle East	Iran	Khouzestan Steel	Khouzestan Steel	plan	?	EAF	1250	World Steel Capacities
Middle East	Iran	Khouzestan Steel	Khouzestan Steel	plan	?	EAF	1250	World Steel Capacities
Middle East	Iran	Khouzestan Steel	Khouzestan Steel	plan	?	EAF	1250	World Steel Capacities
Middle East	Iran	Khouzestan Steel	Khouzestan Steel	plan	?	EAF	1250	World Steel Capacities
Middle East	Iran	Khouzestan Steel	Khouzestan Steel	underway	?	EAF	1000	Company HP(IMIDRO), Metal Expert
Middle East	Iran	Khouzestan Steel	Khouzestan Steel	plan	2026	EAF	1200	World Steel Capacities
Middle East	Iran	Khouzestan Steel	Khouzestan Steel	plan	?	EAF	1300	World Steel Capacities
Middle East	Iran	Iran Alloy Steel Company (IASCO)		underway	?	EAF	1000	Metal Expert, World Steel Capacities
Middle East	Iran	Iran Alloy Steel Company		operating	2023	EAF	700	World Steel Capacities
Middle East	Iran	Iran National Steel Industrial Group (INSIG)		underway	2024	EAF	430	World Steel Capacities
Middle East	Iran	Kaavian Steel		plan	?	EAF	700	World Steel Capacities
Middle East	Iran	Mianeh Steel	IMIDRO	underway	2024	EAF	800	Metal Expert
Middle East	Iran	Sabzevar Steel Complex	IMIDRO	underway	?	EAF	800	Metal Expert, World Steel Capacities
Middle East	Iran	Ghaenat Steel Complex	IMIDRO	underway	?	EAF	800	Metal Expert

Middle East	Iran	Saeb Steel Complex	Daric Investment Group	plan	?	EAF	550	Metal Expert
Middle East	Iran	Shams Iron & Steel Complex		plan	?	EAF	1500	World Steel Capacities
Middle East	Iran	Sabalan Iron and Steel Complex		plan	?	EAF	500	World Steel Capacities
Middle East	Iran	Zonouz steel complex	Daric Investment Group	plan	?	EAF	500	Company HP
Middle East	Iran	Bonab Steel Complex		plan	2025	?	1450	Metal Expert
Middle East	Iran	East Kaveh Steel Company (EKSC)		plan	?	EAF	1000	World Steel Capacities, Metal Expert
Middle East	Iran	Arvand Kaveh Steel		plan	?	EAF	2500	World Steel Capacities
Middle East	Iran	Makran Steel Complex	IMIDRO	plan	2030	EAF	3200	Metal Expert
Middle East	Iran	Gambron Steel		plan	?	EAF	2000	World Steel Capacities
Middle East	Iran	Jahan Foulad Gharb		plan	2025	EAF	500	WM
Middle East	Iran	GHADIR Industries and Mines International Company	Ghadir International Mines and Industries Development Company	underway	2024	EAF	1000	World Steel Capacities, Company HP
Middle East	Iran	Afa Steel		plan	?	EAF	600	World Steel Capacities, Company HP

Middle East	Iran	Amir Kabir Khazar Steel		plan	?	EAF	500	World Steel Capacities
Middle East	Iran	Arian Steel		plan	?	EAF	550	World Steel Capacities
Middle East	Iran	Arvand Jahanara Steel Company (AJSCO)	Arvand Jahanara Steel Company	plan	?	EAF	1200	World Steel Capacities
Middle East	Iran	Azna Steel		plan	?	EAF	700	World Steel Capacities
Middle East	Iran	Bafgh Mineral Complex Iron & Steel Company (B-MISCO)	Bafgh Mineral Complex Iron and Steel Industry Company (B-MISCO)	underway	2024	EAF	800	World Steel Capacities
Middle East	Iran	Boyer Ahmad Steel Complex (Boyer Sanat)		plan	?	EAF	300	World Steel Capacities
Middle East	Iran	Ardakan Steel		plan	?	EAF	1000	World Steel Capacities
Middle East	Iran	Chadormalu Mining & Industrial Co.		underway	2024	EAF	600	Metal Expert
Middle East	Iran	Eghlid Pars Steel		plan	?	EAF	1000	Metal Expert
Middle East	Iran	Fasa Steel Complex Co (Fasco)		plan	?	EAF	1500	World Steel Capacities
Middle East	Iran	Foolad Alborz Iranian Company (FAICO)		plan	?	EAF	800	World Steel Capacities
Middle East	Iran	MIDHCO		plan	?	EAF	1500	World Steel Capacities
Middle East	Iran	MIDHCO		plan	?	EAF	1500	World Steel Capacities
Middle East	Iran	Kavir Damghan Steel Complex (KADASCO)		plan	?	IF	200	World Steel Capacities

Middle East	Iran	Kavir Damghan Steel Complex (KADASCO)		plan	?	EAF	?	World Steel Capacities
Middle East	Iran	Khayyam Steel	Khayyam Steel Neyshabour	underway	2024	EAF	500	Metal Expert
Middle East	Iran	Kurdistan Steel Company	IMIDRO	underway	?	EAF	1000	Platts, Company HP, Metal Expert
Middle East	Iran	Malayer Steel Company		plan	?	IF	300	World Steel Capacities
Middle East	Iran	Malekan Steel	Malekan Steel	plan	?	EAF	400	Metal Expert, World Steel Capacities
Middle East	Iran	Malekan Steel	Malekan Steel	plan	?	EAF	400	World Steel Capacities
Middle East	Iran	Natanz Steel Company	Natanz Steel Industries	plan	?	EAF	850	Metal Expert
Middle East	Iran	Neyshabur Steel Complex		plan	?	EAF	800	World Steel Capacities
Middle East	Iran	North West Steel Industries (NWSI)		plan	?	EAF	800	World Steel Capacities
Middle East	Iran	Orumieh Steel Company	Orumieh Steel Group	plan	?	EAF	1200	World Steel Capacities, Metal Expert, Company HP
Middle East	Iran	Orumieh Steel Company	Orumieh Steel Group	plan	?	IF	400	World Steel Capacities
Middle East	Iran	Orumieh Steel Company	Orumieh Steel Group	plan	?	EAF	800	World Steel Capacities
Middle East	Iran	Persian Gulf Saba Steel		plan	2031	EAF	1500	World Steel Capacities
Middle East	Iran	Persian Gulf Saba Steel		plan	2031	EAF	1500	World Steel Capacities

Middle East	Iran	Persian Gulf Saba Steel		plan	?	EAF	1500	World Steel Capacities
Middle East	Iran	Qeshm Steel Development Co.(QE.S.D.Co)	Qeshm Steel Development Co.(QE.S.D.Co)	plan	?	EAF	1500	Platts, Metal Expert, Company HP
Middle East	Iran	Qeshm Steel Development Co.(QE.S.D.Co)	Qeshm Steel Development Co.(QE.S.D.Co)	plan	?	EAF	1500	Platts, Metal Expert, Company HP
Middle East	Iran	Saba Foulad Zagros	Saba Foulad Zagros	underway	?	EAF	400	Company HP
Middle East	Iran	Sadrfoulad complex	Sadr Steel Company	plan	?	EAF	400	World Steel Capacities
Middle East	Iran	Samangan Steel Industries		plan	?	EAF	750	Metal Expert, World Steel Capacites
Middle East	Iran	Samangan Steel Industries		plan	?	EAF	750	Metal Expert, World Steel Capacites
Middle East	Iran	South Rouhina Steel		plan	?	EAF	550	World Steel Capacities
Middle East	Iran	Torbat Heydariyeh Steel	Torbat Heydariyeh Steel	plan	?	EAF	1450	World Steel Capacities, Metal Expert
Middle East	Iran	Torbat Heydariyeh Steel		plan	?	EAF	1450	World Steel Capacities
Middle East	Iran	Brojen Steel		plan	2025	EAF	1000	WM
Middle East	Iran	Kavir Damghan Steel Complex (KADASCO)	Kavir Damghan Steel Complex (KADASCO)	plan	?	IF	200	Metal Expert

Middle East	Iran	GolGohar Mining & Industrial Co	Golgohar Mining & Industrial Co.	underway	2024	EAF	1500	World Steel Capacities
Middle East	Iran	GolGohar Mining & Industrial Co		underway	2024	EAF	1500	World Steel Capacities
Middle East	Iran	GolGohar Mining & Industrial Co		underway	2026	EAF	1300	World Steel Capacities
Middle East	Iran	National Iranian Steel Company (NISCO)	IMIDRO	underway	?	EAF	800	Metal Expert
Middle East	Iran	North West Steel Industries (NWSI)		plan	?	EAF	800	World Steel Capacities
Middle East	Iran	Kavand Nahan Zamin (KNZ)		plan	?	EAF	100	Metal Expert
Middle East	Iran	Kavir Steel Cooperative		underway	?	IF	150	Metal Expert
Middle East	Iran	Sepid Farab Kavir Steel		underway	2024	EAF	800	Metal Expert
Middle East	Iran	Gohar Zamin Iron Ore Company		plan	?	EAF	3000	Metal Expert
Middle East	Iran	Shahriar Tabriz Steel Industries Company		plan	?	EAF	?	Metal Expert, Company HP
Middle East	UAE	BILDCO		plan	?	EAF	1000	Metal Expert
Middle East	UAE	Arabian Gulf Steel Industries (AGSI)		underway	?	IF	150	World Steel Capacities
Middle East	Iraq	State Company for Iron & Steel (SCIS)	United Brothers Holding	underway	?	EAF	500	Metal Expert
Middle East	Iraq	Galiawa Group		operating	2023	EAF	750	Metal Expert
Middle East	Iraq	Qaiwan Steel		underway	2024	IF	400	Metal Expert

Middle East	Oman	Muscat Steel Industries	Muscat Steel	plan	?	EAF	200	World Steel Capacities
Middle East	Oman	Shumookh Investment and Services (SIS)		plan	?	?	400	Metal Expert
Middle East	Oman	Vulcan Green Steel	Jindal Steel Group	plan	2026	EAF	2500	Metal Expert, Company HP
Middle East	Saudi Arabia	Al-Qaryan Steel Company	Al-Qaryan Steel Company	plan	?	EAF	300	Metal Expert
Middle East	Saudi Arabia	Al-Yamamah Steel Industries	Private	plan	?	EAF	1000	Platts, Metal Expert
Middle East	Saudi Arabia	Arkan Steel	Al-Watania Group	plan	?	EAF	600	World Steel Capacities
Middle East	Saudi Arabia	Atoun Steel Industry		plan	?	EAF	910	Platts, Metal Expert
Middle East	Saudi Arabia	Gulf Tubing Co	Gulf Tubing Co	plan	?	EAF	600	Company HP
Middle East	Saudi Arabia	Madina Metal		underway	?	IF	300	World Steel Capacities
Middle East	Saudi Arabia	Essar Group	Essar Group	plan	2027	EAF	4000	World Steel Capacities
USMCA	United States	U.S. Steel		underway	2024	EAF	2720	Metal Expert
USMCA	United States	Nucor Corporation		plan	2024	EAF	570	Metal Expert
USMCA	United States	North Star BlueScope Steel	BlueScope Steel	underway	?	EAF	850	Company HP
USMCA	United States	AM/NS Calvert LLC	ArcelorMittal	underway	2024	EAF	1500	Metal Expert, Company HP
USMCA	United States	Commercial Metals Company (CMC)		operating	2023	EAF	453	Metal Expert

USMCA	United States	Commercial Metals Company (CMC)		underway	2025	EAF	453	Metal Expert
USMCA	United States	JSW USA	JSW Holdings	plan	?	EAF	?	Platts
USMCA	United States	Liberty House Group	Liberty House Group	plan	?	EAF	?	Company HP
USMCA	United States	Nucor Corporation		plan	2024	EAF	544	Metal Expert
USMCA	United States	Nucor Corporation		underway	2026	EAF	2721	Metal Expert
USMCA	United States	Nucor Corporation		underway	2025	EAF	372	Metal Expert, Company HP
USMCA	United States	Pacific Steel		plan	2025	Steelmaking	380	Company HP
USMCA	United States	Highbar		plan	2025	EAF	544	World Steel Capacities
USMCA	United States	72 Steel		plan	2025	EAF	454	World Steel Capacities
USMCA	United States	Ashoka Steel	Ashoka Steel Industries	plan	2025	EAF	499	Metal Expert, Company HP
USMCA	Canada	Algoma		underway	2024	EAF	3356	World Steel Capacities
USMCA	Canada	ArcelorMittal	ArcelorMittal	plan	2028	EAF	2400	Metal Expert
USMCA	Canada	Gerdau Ameristeel		operating	2023	EAF	181	World Steel Capacities
USMCA	Mexico	Deacero		plan	2024	EAF	?	World Steel Capacities
USMCA	Mexico	Deacero		plan	2026	EAF	1500	Metal Expert, Company HP

USMCA	Mexico	Ternium		plan	2026	EAF	2358	World Steel Capacities
Latin America	Brazil	Aco Cearense		plan	2025	EAF	?	World Steel Capacities
Latin America	Brazil	Grupo Simec		underway	?	EAF	730	Metal Expert, Kallanish
Latin America	Brazil	Grupo Simec		plan	?	EAF	200	Metal Expert
Latin America	Argentina	Tenaris		plan	?	EAF	950	World Steel Capacities
Latin America	Bolivia	Empresa Siderurgica del Mutun	Empresa Siderurgica del Mutun	underway	2024	EAF	1000	Platts, Company HP, Metal Expert
Oceania	Australia	Liberty House Group		underway	2025	EAF	1500	World Steel Capacities
Oceania	New Zealand	New Zealand Steel		plan	2026	EAF	?	World Steel Capacities

Source: <Company HP, government HP and media sources in the table.

Annex B. AVAILABLE INFORMATON ON PLANT-LEVEL CLOSURES

Table A 0.1. Closure data

The rows highlighted in blue do not represent actual reductions, as new investments are either started or planned after the closure. Table summarises the plant-level closure information reported by public and commercial sources up to December 2023. Please note that this does not represent an exhaustive list of closures.

Status	Region	Economies	Location	Company	Equipment	capacity (thousand metric tonnes)	Sources
done	Asia	China	Tangshan	Hebei Iron & Steel Group (HBIS)	BOF	5840	Metal Expert
done	Asia	China	Tangshan	Hebei Iron & Steel Group (HBIS)	BOF	1000	Metal Expert
done	Asia	China	Tangshan, Hebei	Jinan Iron and Steel Group	BOF	2930	Metal Expert
done	Asia	China	Hongta District, Yuxi City	Yunnan Yuxi Iron and Steel Group	BOF	?	Metal Expert
done	Asia	China	Hongta District, Yuxi City	Yunnan Yuxi Iron and Steel Group	BOF	?	Metal Expert
done	Asia	China	Hongta District, Yuxi City	Yunnan Yuxi Iron and Steel Group	BOF	?	Metal Expert
done	Asia	China	Hongta District, Yuxi City	Yunnan Yuxi Iron and Steel Group	BOF	?	Metal Expert
done	Asia	China	Hongta District, Yuxi City	Yunnan Yuxi Iron and Steel Group	BOF	850	Metal Expert
done	Asia	China	Hongta District, Yuxi City	Yunnan Yuxi Iron and Steel Group	BOF	850	Metal Expert
done	Asia	China	Hongta District, Yuxi City	Jiangsu Binxin Iron and Steel Group	BOF	1500	Metal Expert
done	Asia	China	Hongta District, Yuxi City	China Baowu Steel Group	BOF	850	Metal Expert
done	Asia	China	Hongta District, Yuxi City	China Baowu Steel Group	BOF	850	Metal Expert
done	Asia	China	Hongta District, Yuxi City	Hebei Puyang Industrial Group	BOF	850	Metal Expert
done	Asia	China	Hongta District, Yuxi City	Hebei Puyang Industrial Group	BOF	850	Metal Expert

done	Asia	China	Hongta District, Yuxi City	Jiangsu Yonggang Group	BOF	2700	Metal Expert
done	Asia	China	Hongta District, Yuxi City	Zhongxin Iron and Steel Group	BOF	1900	Metal Expert
done	Asia	China	Hongta District, Yuxi City	Zhongxin Iron and Steel Group	BOF	1900	Metal Expert
done	Asia	Japan	Keihin District	JFE Steel	BOF	4600	Metal Expert
expected	Africa	Morocco	Jorf Lasfar	Sonasid	EAF	800	Metal Expert
expected	Asia	China	Fuzhou City, Fujian	Luoyuan Minguang Steel	BOF	1500	Metal Expert
expected	Asia	China	Dazhou City, SicHunan	Sichuan Dazhou Iron and Steel	BOF	2600	ME, kallanish
expected	Asia	China		Tangyin Iron and Steel	BOF	2800	ME, kallanish
expected	Asia	China	Zhangzhou City, Fujian	Sanbao Iron and Steel	EAF	300	Metal Expert
expected	Asia	China	Zhangzhou City, Fujian	Sanbao Iron and Steel	EAF	600	Metal Expert
expected	Asia	China	Zhangzhou City, Fujian	Sanbao Iron and Steel	EAF	650	Metal Expert
expected	Asia	China	Jinan, Shandong	Shandong Iron and Steel Group	BOF	1350	Metal Expert
expected	Asia	China	Jinan, Shandong	Shandong Iron and Steel Group	BOF	1350	Metal Expert
expected	Asia	China	Jinan, Shandong	Shandong Iron and Steel Group	EAF	360	Metal Expert
expected	USMCA	Mexico	Celaya	Deacero	EAF	1100	World Steel Capacities
expected	South America	Argentina	Campana	Tenaris	EAF	475	World Steel Capacities
expected	South America	Brazil	Jean de Monlevade	ArcelorMittal	BOF	1300	World Steel Capacities
expected	Oceania	Australia	Whyalla, South Australia	Liberty House Group	BOF	1300	World Steel Capacities
expected	Oceania	New Zealand	Glenbrook industrial area	New Zealand Steel	BOF	650	Metal Expert

Source: Company HP, government HP and media sources in the table.

Annex C. STEELMAKING CAPACITY DATA BY ECONOMY

Table A 0.1. Crude Steelmaking capacity developments

	Nominal crude steelmaking capacity					
	2010	2019	2020	2021	2022	2023
Africa	33.6	44.6	44.7	43.5	45.8	46.9
Algeria	3.3	7.9	9.3	9.3	9.3	9.5
Angola	0.0	0.5	0.5	0.5	0.5	0.5
Botswana	0.0	0.1	0.1	0.1	0.1	0.1
Cameroon	0.2	0.2	0.2	0.2	0.2	0.2
Democratic Republic of Congo	0.1	0.1	0.1	0.1	0.1	0.1
Cote d'Ivoire	0.0	0.0	0.0	0.0	0.0	0.0
Egypt	9.5	15.6	15.6	14.4	15.2	16.0
Ethiopia	0.5	0.8	0.8	0.8	0.8	0.8
Gabon	0.0	0.1	0.1	0.1	0.1	0.1
Ghana	0.5	0.5	0.5	0.5	0.5	0.5
Kenya	0.5	0.6	0.6	0.6	0.6	0.6
Libya	1.7	1.7	1.7	1.7	1.7	1.7
Mauritius	0.0	0.0	0.0	0.0	0.0	0.0
Morocco	1.5	2.8	2.8	2.8	4.4	4.4
Mozambique	0.0	0.0	0.0	0.0	0.0	0.0
Namibia	0.0	0.0	0.0	0.0	0.0	0.0
Nigeria	2.7	3.1	3.1	3.1	3.1	3.1
South Africa	12.0	9.4	8.1	8.1	8.1	8.1
Sudan	0.1	0.1	0.1	0.1	0.1	0.1
Tanzania	0.0	0.0	0.0	0.0	0.0	0.0
Togo	0.0	0.0	0.0	0.0	0.0	0.0
Tunisia	0.2	0.2	0.2	0.2	0.2	0.2
Uganda	0.1	0.1	0.1	0.1	0.1	0.1
Zambia	0.1	0.1	0.1	0.1	0.1	0.1
Zimbabwe	0.8	0.8	0.8	0.8	0.8	0.8

	2010	2019	2020	2021	2022	2023
Asia	1437.9	1616.5	1622.5	1622.6	1626.1	1618.7
Non-OECD Asia	1229.9	1406.4	1412.4	1418.7	1422.1	1419.3
Bangladesh	3.2	6.1	7.0	7.3	7.3	7.3

Bhutan	0.0	0.0	0.0	0.0	0.0	0.0
Cambodia	0.0	0.0	0.0	0.0	0.0	0.0
China (People's Republic of)	1 057.9	1148.3	1147.9	1146.5	1149.9	1141.5
Chinese Taipei	26.9	29.4	29.4	29.4	29.4	29.4
Hong Kong (China)	0.0	0.0	0.0	0.0	0.0	0.0
India	84.4	128.7	128.7	133.9	133.9	136.9
Indonesia	10.8	17.8	19.6	21.3	21.3	23.8
Japan	132.0	128.5	128.5	122.4	122.4	117.8
Korea	76.0	81.6	81.6	81.6	81.6	81.6
Democratic People's Republic of Korea	11.2	11.2	11.2	11.2	11.2	11.2
Lao People's Democratic Republic	0.2	0.2	0.2	0.2	0.2	0.2
Malaysia	12.9	19.2	19.2	19.2	19.2	19.2
Mongolia	0.1	0.1	0.1	0.1	0.1	0.1
Myanmar	0.1	0.3	0.3	0.3	0.3	0.3
Nepal	0.3	0.3	0.3	0.3	0.3	0.3
Pakistan	3.1	7.1	8.6	9.0	9.0	9.1
Philippines	1.8	1.8	1.8	1.8	1.8	1.8
Singapore	0.8	0.8	0.8	0.8	0.8	0.8
Sri Lanka	0.2	0.2	0.2	0.2	0.2	0.2
Thailand	9.7	11.4	11.4	11.4	11.4	11.4
Viet Nam	6.5	23.7	26.0	26.0	26.0	26.0
ASEAN-6	42.4	74.6	78.7	80.4	80.4	82.9

CIS	139.6	143.4	142.6	143.9	145.0	145.0
Armenia	0.0	0.2	0.2	0.2	0.2	0.2
Azerbaijan	0.9	1.6	1.6	1.6	1.6	1.6
Belarus	2.8	3.0	3.0	3.0	3.0	3.0
Georgia	0.1	0.1	0.4	0.4	0.4	0.4
Kazakhstan	7.1	7.7	7.7	7.7	7.7	7.7
Kyrgyzstan	0.0	0.0	0.0	0.0	0.0	0.0
Moldova	1.0	1.0	1.0	1.0	1.0	1.0
Russia	77.7	88.3	88.8	90.1	90.8	90.8
Turkmenistan	0.2	0.2	0.2	0.2	0.2	0.2
Ukraine	48.8	40.2	38.7	38.7	38.7	38.7
Uzbekistan	1.1	1.1	1.1	1.1	1.4	1.4

	2010	**2019**	**2020**	**2021**	**2022**	**2023**
Europe	297.7	279.6	279.7	280.3.	281.5	283.7
Non-OECD Europe	13.9	12.9	12.9	12.9	12.9	12.9
EU	227.8	208.2	205.6	205.6	205.6	205.7

	Austria	8.5	8.5	8.5	8.5	8.5	8.5
	Belgium	15.1	8.9	8.9	8.9	8.9	8.9
	Bulgaria	1.2	1.2	1.2	1.2	1.2	1.2
	Croatia	0.5	0.3	0.3	0.3	0.3	0.3
	Cyprus	0.0	0.0	0.0	0.0	0.0	0.0
	Czechia	7.8	6.8	6.8	6.8	6.8	6.8
	Denmark	0.0	0.0	0.0	0.0	0.0	0.0
	Estonia	0.0	0.0	0.0	0.0	0.0	0.0
	Finland	5.1	4.5	4.5	4.5	4.5	4.5
	France	22.3	19.1	19.1	19.1	19.1	19.1
	Germany	58.4	58.1	58.1	58.1	58.1	58.1
	Greece	3.7	3.9	3.9	3.9	3.9	3.9
	Hungary	2.0	2.0	2.0	2.0	2.0	2.0
	Ireland	0.0	0.0	0.0	0.0	0.0	0.0
	Italy	38.8	34.7	34.7	34.7	34.7	34.7
	Latvia	0.8	0.9	0.9	0.9	0.9	0.9
	Lithuania	0.0	0.0	0.0	0.0	0.0	0.0
	Luxembourg	3.7	2.4	2.4	2.4	2.4	2.4
	Malta	0.0	0.0	0.0	0.0	0.0	0.0
	Netherlands	7.8	7.8	7.8	7.8	7.8	7.8
	Poland	12.0	12.0	9.4	9.4	9.4	9.5
	Portugal	1.7	1.7	1.7	1.7	1.7	1.7
	Romania	6.0	5.2	5.2	5.2	5.2	5.2
	Slovak Republic	5.5	4.9	4.9	4.9	4.9	4.9
	Slovenia	0.7	0.7	0.7	0.7	0.7	0.7
	Spain	20.3	18.8	18.8	18.8	18.8	18.8
	Sweden	6.0	6.0	6.0	6.0	6.0	6.0
Other Europe		70.0	71.4	74.1	74.7	75.9	78.1
	Albania	0.9	0.9	0.9	0.9	0.9	0.9
	Bosnia Herzegovina	1.8	1.8	1.8	1.8	1.8	1.8
	Iceland	0.0	0.0	0.0	0.0	0.0	0.0
	Macedonia	0.5	0.5	0.5	0.5	0.5	0.5
	Montenegro	0.4	0.4	0.4	0.4	0.4	0.4
	Norway	1.0	1.0	1.0	1.0	1.0	1.0
	Serbia	2.7	2.7	2.7	2.7	2.7	2.7
	Switzerland	1.4	1.4	1.4	1.4	1.4	1.4
	Türkiye	42.7	50.7	53.4	54.0	55.2	57.4
	United Kingdom	18.7	12.1	12.1	12.1	12.1	12.1

	2010	**2019**	**2020**	**2021**	**2022**	**2023**

Latin America	66.3	73.9	73.4	73.9	73.9	74.2
South America	63.6	72.2	71.7	72.2	72.2	72.2
Non-OECD Latin America	62.2	69.8	69.3	69.9	69.9	70.1
Argentina	6.7	7.3	7.3	7.3	7.3	7.3
Brazil	44.6	51.4	50.9	50.9	50.9	50.9
Bolivia	0.0	0.0	0.0	0.2	0.2	0.2
Chile	2.0	2.0	2.0	2.0	2.0	2.0
Colombia	2.0	2.0	2.0	2.0	2.0	2.0
Costa Rica	0.0	0.0	0.0	0.0	0.0	0.0
Cuba	0.7	0.7	0.7	0.7	0.7	0.9
Dominican Republic	0.4	0.4	0.4	0.4	0.4	0.4
Ecuador	0.6	1.3	1.3	1.3	1.3	1.3
El Salvador	0.2	0.2	0.2	0.2	0.2	0.2
Guatemala	0.5	0.5	0.5	0.5	0.5	0.5
Panama	0.0	0.0	0.0	0.0	0.0	0.0
Paraguay	0.1	0.3	0.3	0.3	0.3	0.3
Peru	1.6	2.0	2.0	2.4	2.4	2.4
Puerto Rico	0.0	0.0	0.0	0.0	0.0	0.0
Trinidad Tobago	1.0	0.0	0.0	0.0	0.0	0.0
Uruguay	0.2	0.2	0.2	0.2	0.2	0.2
Venezuela	5.6	5.6	5.6	5.6	5.6	5.6

Middle East	38.5	80.7	84.1	89.0	92.3	93.9
Non-OECD Middle East	37.9	80.1	83.6	88.5	91.8	93.4
Afghanistan	0.0	0.0	0.0	0.0	0.0	0.0
Bahrain	0.0	1.0	1.0	1.0	1.0	1.0
Iran	22.5	48.3	50.3	54.8	57.4	58.2
Iraq	0.2	2.6	2.9	3.3	4.0	4.8
Israel	0.6	0.6	0.6	0.6	0.6	0.6
Jordan	0.6	1.2	1.2	1.2	1.2	1.2
Kuwait	1.4	1.4	1.4	1.4	1.4	1.4
Lebanon	0.2	0.2	0.2	0.2	0.2	0.2
Oman	0.5	3.0	4.2	4.2	4.2	4.2
Qatar	2.8	3.2	3.2	3.2	3.2	3.2
Saudi Arabia	6.7	11.6	11.6	11.6	11.6	11.6
Syrian Arab Republic	0.1	2.6	2.6	2.6	2.6	2.6
United Arab Emirates	2.8	4.8	4.8	4.8	4.8	4.8
Yemen	0.1	0.3	0.3	0.3	0.3	0.3

	2010	**2019**	**2020**	**2021**	**2022**	**2023**

North America	156.7	154.2	157.5	157.7	162.8	163.3
Canada	18.6	16.2	16.2	16.2	16.2	16.3
Mexico	20.3	27.7	27.7	27.7	27.7	27.7
United States	117.9	110.4	113.6	113.9	118.9	119.3

Oceania	9.1	6.4	6.4	6.4	6.4	6.4
Australia	8.1	5.4	5.4	5.4	5.4	5.4
New Zealand	1.0	1.0	1.0	1.0	1.0	1.0

OECD TOTAL	662.2	641.9	645.3	640.0	646.3	644.4
Non-OECD TOTAL	1517.2	1757.3	1765.5	1777.3	1787.4	1787.5

WORLD TOTAL	2179.5	2399.2	2410.8	2417.4	2433.7	2432.0

Note on China:
The data on nominal crude steelmaking capacity provided for China do not include production capacity by "illegal" *("违法 Wéifǎ")* induction furnaces, nor do they reflect any changes in steelmaking capacity associated with those furnaces.

Note on ASEAN-6:
ASEAN-6 denotes the aggregate of member economies of SEAISI (The South East Asia Iron and Steel Institute) in the ASEAN region, i.e. Indonesia, Malaysia, Philippines, Singapore, Thailand and Viet Nam.

Source: OECD.

Annex D. DATA FOR GLOBAL CRUDE STEELMAKING CAPACITY AND CRUDE STEEL PRODUCTION

Table A 0.1. Global crude steelmaking capacity and crude steel production (data from 2010)

mmt	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Capacity (LHS)	1 191	1 221	1 348	1 486	1 558	1 665	1 753	1 864	1 955	2 068	2 179	2 269	2 321	2 413	2 432	2 421	2 417	2 404	2 378	2 399	2 411	2 417	2 434	2 432
Production (LHS)	850	852	905	971	1,063	1,148	1,250	1,348	1,343	1,239	1,435	1,540	1,562	1,652	1,674	1,623	1,633	1,737	1,829	1,877	1,881	1,962	1,888	1,888
Capacity-Production Gap (RHS)	341	369	443	515	495	517	503	516	611	829	744	729	758	760	758	798	784	667	549.4	522.1	529.5	455.1	546.2	543.8
Crude steel production as a % of capacity	71.4%	69.8%	67.1%	65.4%	68.2%	69.0%	71.3%	72.3%	68.7%	59.9%	65.9%	67.9%	67.3%	68.5%	68.8%	67.1%	67.6%	72.3%	76.9%	78.2%	78.0%	81.2%	77.6%	77.6%

Note: Capacity data reflect information up to December 2023
Source: OECD for crude steelmaking capacity and World Steel Association for crude steel production

Annex E. WORKING DEFINITIONS USED

Steelmaking capacity

The OECD Secretariat employs a definition of nominal crude steelmaking capacity based on maximum theoretical equipment capacity[1]. This definition does not take into account yield losses, maintenance and other factors affecting the productivity of installed steelmaking equipment. Therefore, steelmaking capacity figures provided by the OECD should not be regarded as effective capacity.

Capacity is defined in volume (tonnes) and annual capacity data figures reflect all existing steelmaking capacity at the end of a calendar year.

Steelmaking equipment

The OECD Secretariat considers as steelmaking equipment any equipment used to produce crude steel. The definition excludes iron-making equipment considered here as upstream, as well as casting, rolling or finishing equipment considered here as downstream. More specifically, the following equipment types are considered as crude steelmaking:

Type	Code
Electric arc furnace	EAF
Energy Optimising Furnace	EOF
Induction furnace	IF
LD Basic Oxygen furnace	BOF
Open hearth furnace	OHF
Steelmaking - not specified	STEELMKG

Assessing capacity developments

Information from the three databases described in Annexes A-C (existing capacity, new investments and closures) in this paper are used to assess capacity developments[2]. More specifically, changes in capacity are derived by taking into account new capacity additions and permanent closures in a given economy. In order to assess potential gross capacity additions in the future, investment projects are classified as "underway" or "planned". A project classified as "underway" is one which is under construction or for which contracts for equipment have been awarded and a major financial or state commitment has been made. "Planned" projects are more uncertain because they are either at the feasibility or early planning stage, yet to receive financial or state backing, or not scheduled for completion at a specified time. The classification of projects and comments on their progress do not in any way represent a judgement or imply a view on the advisability or feasibility of the projects.

Because closures cannot be forecasted, the tables in this document provide only potential gross capacity additions and do not provide projections of net changes in capacity. It should be noted that planned or underway investments are sometimes altered due to changes in market conditions. Postponements refer to projects that were put on hold for a definite or

indefinite period, while cancellations are previously announced projects that will no longer be implemented.

Principle of overestimate

The Secretariat assumes that in the absence of any further information, any projects classified as “underway” with a start date that expired, have since become “operating”. These projects are taken into account for the calculation of the annual capacity aggregate of the corresponding economy. The Secretariat may adjust the data retrospectively if it obtains new information of the status of the specific investment projects.

Steelmaking capacity closures

The OECD Secretariat distinguishes between "permanent" and "temporary" steelmaking capacity closures. Permanent closures of capacity are considered to involve dismantling and scrapping of the equipment used for producing crude steel, or otherwise rendering such equipment permanently unusable for manufacturing crude steel. Temporary closures entail measures other than permanent closures as defined above, whereby production can be resumed in the future. Temporary closures include, for example, the idling of a plant's furnace. Only permanent closures are used for the purpose of calculating existing capacity. In practice, when compiling the database, it is unfortunately not always possible to understand from media sources if a closure is only temporary or permanent. This explains why the field value of “Type of closures” is sometimes set to “Others (unidentified)” in the OECD database on closures.

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Endnotes

[1] This definition is also commonly referred to as nominal, rated or nameplate capacity.

[2] The list of data sources is available at http://www.oecd.org/sti/ind/steelcapacity-methodology.htm