

Unclassified**English - Or. English****16 December 2022****DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INNOVATION
STEEL COMMITTEE****Latest developments in steelmaking capacity**

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Table of contents

Executive Summary	5
1. Introduction	7
2. Global summary of steelmaking capacity	8
2.1 Global summary	8
2.2 Regional capacity developments	8
2.3 The gap between global capacity and production	12
3. A review of regional capacity developments	13
3.1. Africa	13
3.2. Asia and Oceania	13
3.3. Commonwealth of Independent States	21
3.4. Europe	21
3.5. Latin America	22
3.6. Middle East	23
3.7. North America	24
4. The latest developments in cross-border investments	26
5. Conclusions	29
Annex A. AVAILABLE INFORMATION ON PLANT LEVEL INVESTMENTS AND THEIR OWNERS	30
Annex B. AVAILABLE INFORMATION ON PLANT-LEVEL CLOSURES	49
Annex C. STEELMAKING CAPACITY DATA BY ECONOMY	50
Annex D. DATA FOR GLOBAL CRUDE STEELMAKING CAPACITY AND CRUDE STEEL PRODUCTION	55
Annex E. WORKING DEFINITIONS USED	56
References	58
Endnotes	98

FIGURES

Figure 1. Evolution of crude steelmaking capacity in OECD and non-OECD economies	8
Figure 2. Top five economies in terms of steelmaking capacity growth over the past five years	9
Figure 3. Potential gross capacity additions by region and equipment types	11
Figure 4. Global crude steelmaking capacity and crude steel production	12
Figure 5. The share of domestic and cross-border investments in new steelmaking capacity projects starting in 2022 or later	26

TABLES

Table 1. Current nominal capacity and potential gross capacity additions by region	10
Table 2. Potential gross capacity additions by region and equipment types from 2023 to 2025 (mmt)	11
Table 3. Domestic and cross-border investments in new steelmaking capacity projects	27
Table 4. Cross-border and joint venture investments in new steelmaking capacity projects	28
Table 5. Investment data	30
Table 6. Closure data	49
Table 7. Crude Steelmaking capacity developments (in mmt)	50
Table 8. Global crude steelmaking capacity and crude steel production (data from 2010)	55

Executive Summary

Excess capacity continues to be a significant challenge facing the global steel industry. While steel market conditions showed some modest improvement in 2021, the market situation is now weakening and excess capacity pressures are building.

This report indicates that continuous investment activity in new steelmaking capacity, especially in Asia, will drive the global capacity expansion over the next three years (2023-25). Many of the new investments in Asia will be geared towards the installation of traditional, large-scale blast-furnace/basic oxygen furnace facilities (hereafter, BF/BOF, respectively). This contrasts from the trend observed in other regions, where capacity growth is more moderate and focussed mainly on electric-arc furnaces (hereafter, EAF) capacity. This report finds that:

- **Global excess capacity in steel is set to widen this year.** Global crude steelmaking capacity could increase by 29.5 million metric tonnes (mmt), or 1.2%, to 2460.8 million metric tonnes (mmt) in 2022. By region, the Middle East and Asia account for nearly a third of that estimated growth.
- **Capacity utilisation rates will deteriorate in 2022.** The gap between global capacity and production is expected to expand in 2022 due to weak steel production and continued growth in capacity. World steel production as a share of capacity could decrease from 78.5% in 2021 to 77.1% in 2022. This means global steelmaking capacity is expanding despite deteriorating global steel demand, which will put pressure on steel prices and weaken the industry's profitability.
- **Global steelmaking capacity increases over the last five years were led by Asia and the Middle East.** Global steelmaking capacity trends were relatively moderate between 2016 and 2021, with an increase of 0.6% (14.6 mmt) during the period. This reflected different trends across regions, with growth in Asia and the Middle East (particularly Iran, India and Viet Nam) being offset by capacity reductions or stagnant growth in other regions.
- **Outward capacity investments by Chinese steel companies are proceeding rapidly, mainly in Asia but also Africa.** While steelmaking capacity in the People's Republic of China (hereafter "China") has remained relatively stable in the last few years, Chinese steel companies are investing heavily in capacity projects overseas. Chinese companies are involved in 13 cross-border investments and participate in nine joint venture investments abroad.
- **Excess capacity is expected to expand in the coming years.** Global steelmaking capacity is expected to continue expanding over the next three years (2023-25). A total of 53.5 mmt of capacity is currently underway for completion over the next three years while an additional 90.8 mmt of capacity expansions are in the planning stages. Should all these projects be realized, global steelmaking capacity could increase by 5.9% between 2023 and 2025. This report shows that the steel industry in some countries (e.g. India; see Box 2) have plans for significant capacity expansion over the longer term.
- **Capacity projects differ significantly by technology.** In Asia and Latin America, over 75% of the capacity projects expected to come on stream during 2023 to 2025 involve BOF facilities. Other regions are not expected to see new BOF projects during the same period.

- **The number of steel-producing economies is gradually increasing.** In 2021, the first steelmaking facility started operations in Bolivia to meet local demand for steel. Namibia's first steelmaking facility is scheduled to start operation in the second half of 2022. Mozambique may also become a new steel-producing economy in the near future; the new facility is expected to meet local and regional steel demand from the manufacturing and urban infrastructure sectors.

1. Introduction

This report provides an in-depth analysis of recent steelmaking capacity developments taking place around the world, and expectations for the next few years by examining details of capacity investment projects announced by steel companies as well as the policy context relevant for capacity trends in a number of economies. 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 monitor investments and steel plant closures in order to understand current situation and emerging risks that may impact the industry in the future. The data presented in this report indicate that investments in new capacity continue to advance at a robust pace in some regions of the world, particularly in Asia where most of the new investments involve traditional BF/BOF facilities. Other regions are seeing more moderate increases in capacity, with a focus on EAF plants.

The remainder of this report is structured as follows. The next section summarises global steelmaking capacity over the last few years, including the economies contributing most to recent developments, the potential capacity expansions over the next three years and the gap between global capacity and production. Section 3 provides the reader with descriptions of capacity developments taking place by region, with details about the steel companies, plants and technologies involved in capacity investments as well as the policy context in key economies. Section 4 overviews the latest developments in cross-border and joint-venture investments, including the extent of such investments and the total capacity associated with them by region.

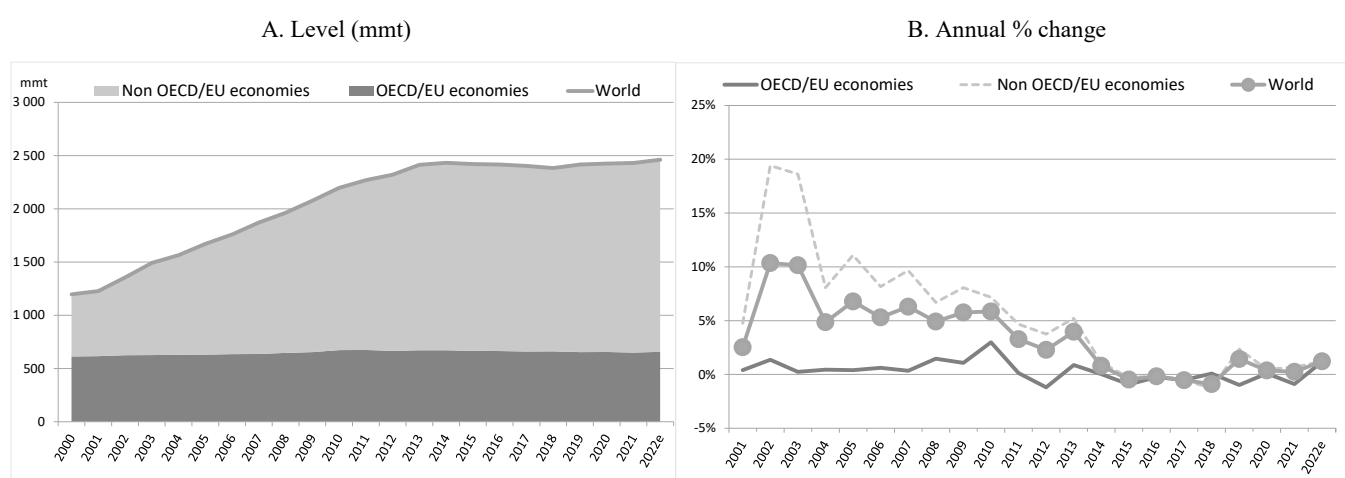
This report also provides important data and explanations for the reader in the annexes at the end. Annex A and B present detailed tables with data on each capacity expansion and closure by project. Annex C provides a table that shows the level of steelmaking capacity (in mmt) by country since 2010, 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. Global summary of steelmaking capacity

2.1 Global summary

The latest available information (as of June 2022) suggests that global steelmaking capacity could increase in 2022 for the fourth year in a row (Figure 1). Global steelmaking capacity is expected to increase to 2 460.8 mmt by the end of 2022, resulting in a 1.2% increase (i.e. 29.5 mmt) from the level observed at the end of 2021. This represents a *net* increase, in other words it takes 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 reflect information available to June 2022.

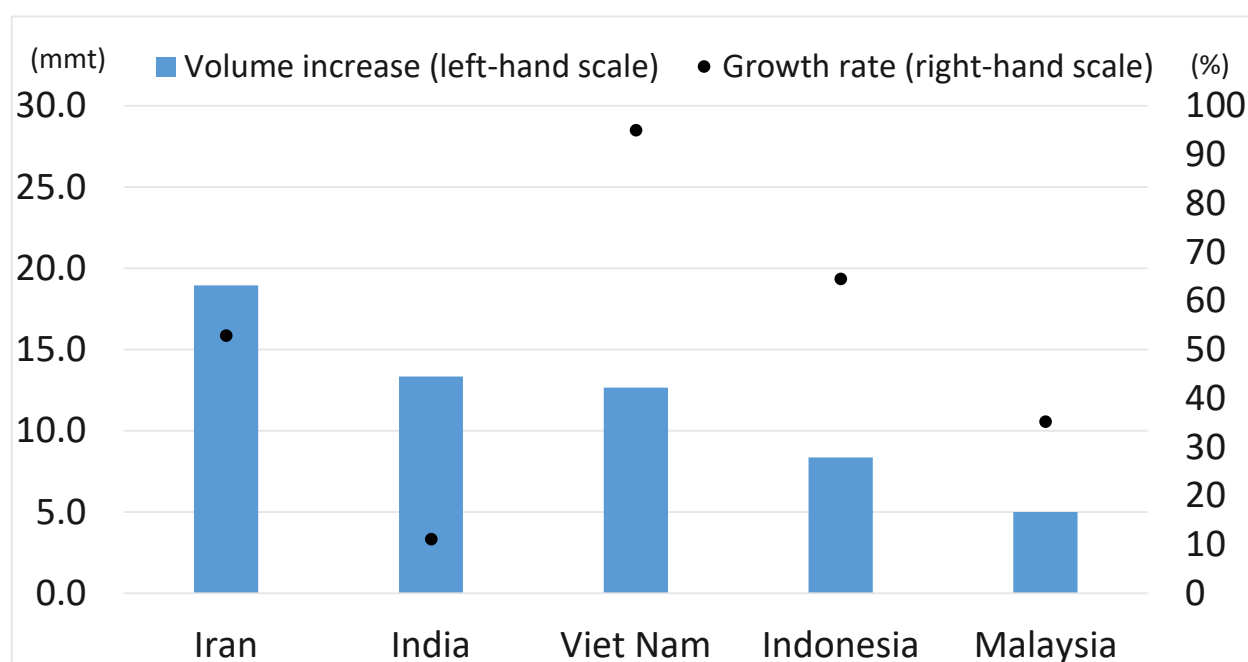
Source: OECD

2.2 Regional capacity developments

2.2.1. Growth in steelmaking capacity since 2016

At the overall global level, steelmaking capacity trends were relatively moderate between 2016 and 2021, with an increase of 0.6% (14.6 mmt) during the period. This reflected different trends across regions, with growth in Asia and the Middle East (particularly Iran, India and Viet Nam) being offset by capacity reductions or stagnant growth in other regions.

Examining trends since 2016 by economy, Iran stands out as the economy with the most significant capacity increase. Iranian steelmaking capacity has expanded by 19.0 mmt (53%) over the last five years, making Iran the only economy outside of Asia within the group of countries experiencing the most significant steelmaking capacity growth over the past five years. India has increased its steelmaking capacity by 13.3 mmt (11%) since 2016, and the country became the second largest steel producing economy in the world ahead of Japan during this period. Viet Nam, Indonesia and Malaysia also increased their capacity significantly, doing so by 12.7 mmt (95%), 8.4 mmt (64 %) and 5.0 mmt (35%) respectively.

Figure 2. Top five economies in terms of steelmaking capacity growth over the past five years

Source: OECD

2.2.2. Current and future capacity developments

Table 1 provides recent capacity developments by region and presents additions of capacity expected over the next three years. In 2022, crude steelmaking capacity will increase the most in the Middle East, where an additional 8.6 mmt of capacity is expected to start operations this year. Steelmaking capacity additions are expected to amount to 7.9 mmt in Asia (representing growth of 0.5% over the previous year), 6.1 mmt in North America (3.9% over the previous year), 4.1 mmt in Africa (9.5% over the previous year), 1.6 mmt in Europe (0.6% over the previous year) and 1.1 mmt in the Commonwealth of Independent States, hereafter “CIS” (0.8% over the previous year). The OECD expects steelmaking capacity to remain unchanged in Latin America and Oceania, as no new investments or permanent closures have taken place in these regions during 2022.

Table 1. Current nominal capacity and potential gross capacity additions by region

	Nominal capacity (mmt)	Nominal capacity (mmt)	% change expected	Potential gross capacity additions 2023-25 (mmt)		Capacity in 2025 (mmt)		% change expected (2022e vs 2025)	
	2021	2022e (A)	2022-2021	Underway (B)	Planned (C)	Low (A)+(B)	High (A)+(B)+(C)	Low	High
Africa	43.5	47.6	9.5	0.0	2.0	47.6	49.6	0.0	4.2
Asia	1622.6	1630.6	0.5	35.5	59.3	1666.0	1725.4	2.2	5.8
CIS	143.9	145.1	0.8	2.8	2.6	147.9	150.4	1.9	3.7
Europe	289.9	291.5	0.6	5.4	6.1	296.9	303.0	1.9	3.9
EU	213.4	213.6	0.1	0.0	6.1	213.6	219.7	0.0	2.9
Other Europe	76.5	77.9	1.9	5.4	0.0	83.3	83.3	6.9	6.9
Latin America	78.2	78.2	0.0	2.7	5.1	81.0	86.0	3.5	10.0
Middle East	89.0	97.6	9.7	5.2	5.7	102.8	108.5	5.3	11.1
North America	157.7	163.8	3.9	2.0	10.1	165.8	175.8	1.2	7.3
Oceania	6.4	6.4	0.0	0.0	0.0	6.4	6.4	0.0	0.0
OECD/EU economies Total	649.6	657.4	1.2	7.4	16.9	664.7	681.6	1.1	3.7
non-OECD/EU economies Total	1781.6	1803.4	1.2	46.2	73.9	1849.6	1923.5	2.6	6.7
World Total	2431.3	2460.8	1.2	53.5	90.8	2514.3	2605.1	2.2	5.9

Note: “e” denotes estimation. The capacity data reflect information up to June 2022. 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. Estimates regarding steelmaking capacity in 2025 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

When looking at the capacity that will be potentially added in the future, the OECD classifies investment projects as “underway” (and thus more likely to be completed during the projection period) or “planned” (which are less certain but nevertheless could 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. On the other hand, planned projects are more uncertain projects because they are either at the feasibility or early planning stage, have not yet received financial or state backing, or are not scheduled for completion at a specified time.

Information on announced investment projects suggests that, globally, 53.5 mmt of gross capacity additions are currently underway and thus likely to come on stream during the next three-year period of 2023-25. An additional 90.8 mmt of capacity additions are currently in the planning stages for possible start-up during the same period (see Table 1). The steel produced by these facilities will meet demand in a wide range of sectors. Given the dominant role of BF/BOF investments in global capacity trends, it may be assumed that most of the future new steel supply will go to metal-containing goods produced by downstream manufacturing industries, including vehicle, ship, machinery, and other durable goods producers.

In particular, Asia may continue to experience substantial increases in steelmaking capacity over the next three years if all the ongoing projects are ultimately realised; the region currently has a total of 35.5 mmt of capacity additions underway for start-up during 2023-25, with an additional 59.3 mmt in the planning stages.

Turning to other regions, Europe, the Middle East, the CIS, Latin America and North America could also see an increase in capacity, with 5.4 mmt, 5.2 mmt, 2.8 mmt, 2.7 mmt and 2.0 mmt of gross additions currently underway in each region, respectively. Additionally, there are planned investment projects in North America, Europe, Middle East, Latin America, the CIS and Africa that aim to add 10.1 mmt, 6.1 mmt, 5.7 mmt, 5.1

mmt, 2.6 mmt and 2.0 mmt of capacity, respectively, during 2023-25. In Oceania, there are no plans to start capacity investment projects during 2023-25.

Table 2 and Figure 3 present potential gross capacity additions by region and equipment types from 2023 to 2025. Of the world total of 144.3 mmt of capacity currently underway or in the planning stages for completion over the next three years, BOF projects account for 83.8 mmt (58.1% of the total) while EAF projects make up 53.0 mmt (36.8%) of the total. The remaining projects, for which the technology is unknown, amount to 7.5 mmt (or 5.2%) of the total.

It is important to take into account regional steel demand considerations when assessing capacity developments around the world, due to the impacts on trade between regions. Rapid growth in capacity and steel production can create trade disturbances if local demand conditions are less robust than anticipated. Indeed, some regions such as the Middle East are currently witnessing rapid steel production growth while demand has softened considerably.

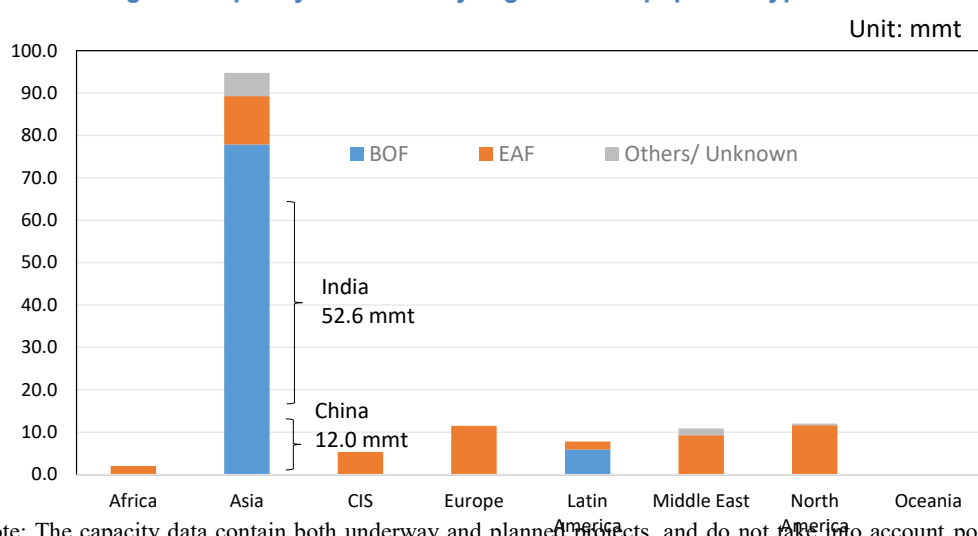
Table 2. Potential gross capacity additions by region and equipment types from 2023 to 2025 (mmt)

	2023			2024			2025		
	BOF	EAF	Others/ Unknown	BOF	EAF	Others/ Unknown	BOF	EAF	Others/ Unknown
Africa	-	2.0	-	-	-	-	-	-	-
Asia	18.1	1.0	4.5	37.3	2.7	-	22.5	7.7	1.0
CIS	-	1.2	-	-	2.2	-	-	2.0	-
Europe	-	5.4	-	-	-	-	-	6.1	-
EU	-	-	-	-	-	-	-	6.1	-
Other Europe	-	5.4	-	-	-	-	-	-	-
Latin America	4.9	1.7	-	1.0	-	-	-	0.2	-
Middle East	-	4.5	0.2	-	2.1	-	-	2.7	1.5
North America	-	2.0	-	-	9.7	-	-	-	0.4
Oceania	-	-	-	-	-	-	-	-	-

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: Metal Expert, Platts, Kallanish, and steel company websites

Figure 3. Potential gross capacity additions by region and equipment types



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 websites

As can be seen in Figure 3, regional investment trends differ considerably in terms of technology. In Asia and Latin America, BOF facilities account for over 75% of the tonnage volume of capacity expansions. Most of the BOF plant installations will take place in India or the People's Republic of China (hereafter "China"). The reader is referred to Annex A for details on each project.

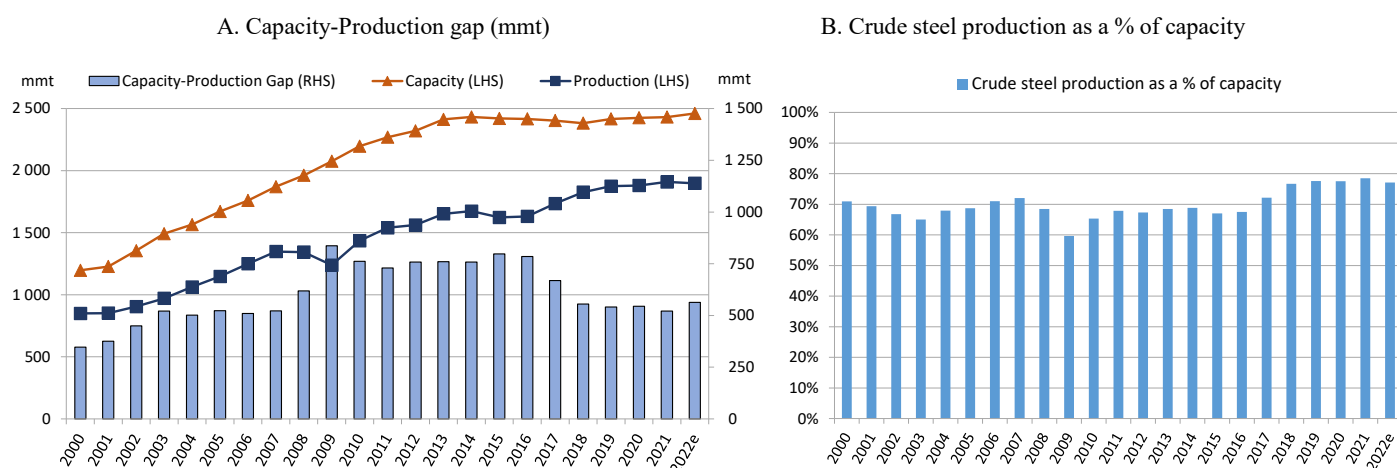
In contrast, investments elsewhere mostly involve the EAF production route, with no new BOF plants expected to start operations in Africa, the CIS, Europe, the Middle East, North America and Oceania during 2023-25. In addition, almost all new projects in Europe and North America are replacement projects for environmental reasons.¹

2.3 The gap between global capacity and production

The gap between global capacity and production could potentially increase to 562.9 mmt in 2022 from 521.6 mmt in 2021, in view of the weak trend in world steel production observed in the first half of 2022 (which stood at an annualised level 1 897.9 mmt), and given the expected increase in capacity (Figure 4 A).

Annualised data from the first half of 2022 suggest that global steel production as a share of capacity, an indicator of the global capacity utilisation rate, could decrease from 78.5% in 2021 to 77.1% in 2022 (Figure 4 B).

Figure 4. Global crude steelmaking capacity and crude steel production



Note: "e" denotes estimation. Capacity data reflect information up to June 2022. The production figure for 2022 is the annualised level observed during the first six months of the year. All production data are from the World Steel Association: figures for 2021 and 2022 are based on the monthly release of 22 July 2022 while annual data from 2000 to 2020 are from *Steel Statistical Yearbook 2021* (worldsteel, 2022^[1]). See Annex D for a table with further data on global crude steelmaking capacity and production.

Source: OECD for crude steelmaking capacity and World Steel Association for crude steel production.

3. A review of regional capacity developments

3.1. Africa

In 2022, steelmaking capacity in Africa is set to increase by about 10% (+4.1 mmt) to 47.6 mmt due to capacity expansions in many African countries. However, African steelmaking capacity is not expected to change over the next three years (2023- 2025), as there are currently no projects underway.

In Central and Southern Africa, Namibia's Groot Group is advancing construction of the economy's first steelmaking plant, with an EAF with a capacity of 1.0 mmt being installed in the Ohangwena region. The plant is expected to be completed during the second half 2022 (Metal Expert, 2022^[2]).

In Western Africa, Kam Industries is constructing a new induction furnace (hereafter, IF) in Nigeria's Kwara State, with a capacity of 0.26 mmt. It is scheduled to start operations in the second half of 2022. According to the company, this facility aims to reduce the country's dependence on imports of long steel products (Metal Expert, 2021^[3]).

In Eastern Africa, China's Tsingshan Holding Group is moving forward with an EAF with a capacity of 1.2 mmt in Chivhu, Zimbabwe. The plant is expected to become operational in December 2022 (Kallanish, 2022^[4]).

Several projects are also proceeding in Northern Africa. In Morocco, Riva Industries has almost finished the construction of its new EAF with a capacity of 0.8 mmt. This facility is scheduled to become operational during the course of 2022 (Metal Expert, 2022^[2]). In Egypt, Ezz Rolling Mills (ERM) is constructing a new EAF plant with a capacity of 0.85 mmt. This facility is scheduled to become operational in September 2022 (Metal Expert, 2022^[5]). In addition, Arabian Steel plans to construct a new EAF facility in Egypt, with a capacity expected to reach 1.0 mmt when the plant is fully ramped up. However, its completion date is unknown (Metal Expert, 2021^[6]). Furthermore, China's Wu'an Xin Feng Resources Recycling Investment Holdings and Chengdu Building Material Institute plan to construct a new 2.0 mmt EAF plant in the Suez region of Egypt. This project is part of China's Belt and Road Initiative for international co-operation (Metal Expert, 2022^[7]). In Algeria, Tosyali Algeria announced a plan to build a new 2.0 mmt DRI-based EAF in Oran city. It is expected to start operations in 2023 (Tenova, 2022^[8]).

3.2. Asia and Oceania

Steelmaking capacity in Asia is expected to increase by 7.9 mmt in 2022, to a level of 1 630.6 mmt, representing growth of 0.5% from 2021. In addition, there are numerous investment projects underway or planned which are expected to become operational during the 2023-2025 period. The projects that are now underway could add an additional 35.5 mmt of steelmaking capacity by 2025 (in gross terms), bringing Asia's total capacity to 1 666.0 mmt (+2.2% during the three-year period) in the absence of closures. On the other hand, no new investments are underway or planned in Oceania during 2022 and the 2023-2025 period, according to information from the publicly available sources used to update the OECD's monitoring databases.

China

In China, steelmaking capacity has not changed much over the last few years possibly reflecting the country's strict capacity replacement policy.² In the first half of 2022, few replacement projects were implemented, which may have reflected the impacts of zero-COVID policies. However several replacement projects are expected to start operations in the second half of 2022.

In the eastern region of China, Heyuan Derun Iron and Steel began operating several new EAFs with a capacity of 0.9 mmt in Guangdong province in the first half of 2022. The company shut down existing EAFs with a total of 0.92 mmt of capacity, to offset the new capacity increase according to the swap scheme (Kallanish, 2022^[9]). In Fujian province, Sanbao Iron and Steel has changed its replacement project. The company originally intended to construct a new BOF, but now the company is constructing EAFs with a total capacity of 1.5 mmt, which are expected to start operations in 2024. Once the plant is operational, the company is expected to shut down existing EAFs that have a total capacity of 1.55 mmt (Kallanish, 2022^[10]). In addition, Luoyuan Minguang Steel plans to operate a new 1.25 mmt BOF in Fujian province and shut down an existing 1.5 mmt BOF in the same province in the second half of 2023 (Metal Expert, 2022^[11]).

In Hebei province, HBIS Tangyin Iron and Steel is still advancing construction on two BOFs with a total capacity of 2.0 mmt. To offset the capacity of these new facilities, the company will close existing BOFs with a total of 2.8 mmt of capacity. However, the starting date of this project is still undisclosed (Kallanish, 2021^[12]). Tianzhu Iron and Steel is proceeding with the construction BOFs with capacity totalling 2.87 mmt in the Tangshan Seaport Economic Development Zone of Hebei province. The company will close a 3.79 mmt BOF in a nearby area and this capacity replacement is scheduled to be completed by the end of 2022 (Metal Expert, 2022^[13]). Hongxing Iron and Steel is constructing three BOFs (3.45 mmt in total), which are expected to start operations in Qinhuangdao city, Hebei province in 2022. The company will shut down 3.8 mmt of BOF capacity the same year (Metal Expert, 2021^[14]). Jingye Iron and Steel permanently shut down two BOFs (1.9 mmt in total) in Shijiazhuang City, Hebei Province in 2021. The company is now building a new 1.5 mmt BOF in the same area, but its completion schedule is unknown (Metal Expert, 2021^[15]).

In Jiangsu province, Zenith Steel is still continuing construction of three BOFs with a total capacity of 5.85 mmt in Nantong City. In tandem with this capacity expansion, the company is expected to shut down around 6.0 mmt of existing BOFs in a nearby city. This capacity replacement is planned to be completed by 2023 (Metal Expert, 2022^[16]) (Kallanish, 2021^[17]).

In Shandong province, Rizhao Iron and Steel is constructing BOFs with a total capacity of 2.7 mmt, which are scheduled to start operations in the second half of 2022. Longsheng Iron and Steel plans to shut down its 2.0 mmt BOF in the same province in the same period (Metal Expert, 2021^[18]). Also, Linyi Iron and Steel Investment Group Special Steel is advancing construction on its two new BOFs (2.7 mmt in total) at its greenfield plant in Linyi City, Shandong Province. This facility is expected to have started operations in the summer of 2022 (Metal Expert, 2022^[19]). One of the group's companies, Jiangxin Iron and Steel, had closed some steelmaking facilities in 2019 to allow this BOF to be built, and therefore no other facilities have to be closed (Kallanish, 2021^[20]). In Tianjin city, Rockcheck Iron and Steel is continuing construction of a 0.5 mmt EAF. The company will shut down an existing 1.2 mmt BOF and this capacity replacement was scheduled for August 2022 (Metal Expert, 2021^[21]).

In the central region of China, in Shanxi Province, Tongcai Industry and Trade is constructing two BOFs and one EAF (2.78 mmt of capacity in total) in Linfen City, which was scheduled to start operations in August 2022. The company also plans to shut down an existing 2.8 mmt BOF in the same area during the course of this year (Metal Expert, 2022^[22]).

In the western region of China, Chengdu Metallurgical Experimental Plant (Chengdu Metallurgy) closed its existing EAFs that had a total capacity of 2.64 mmt in 2021 and began operations of new EAFs with a total of 2.0 mmt of capacity in Sichuan Province in the first half of 2022. (Metal Expert, 2021^[23]). Dazhou Iron and Steel plans to add BOFs with 2.3 mmt of capacity in Sichuan province by 2024. The company will shut down existing 2.6 mmt of BOF capacity by 2025 in the same place (Kallanish, 2021^[24]). Xianfu Iron and Steel is advancing on the construction of two BOFs (with capacity of 2.6 mmt in total) and plans to shut down five BOFs (3.6 mmt of capacity in total) in Yuxi city by the end of 2023 (Kallanish, 2021^[25]) (Metal Expert, 2021^[26]).

In addition to the above-mentioned domestic expansions, China is also active in investing in steel projects overseas. Many of these are related to the Belt and Road Initiative. Box 1 provides insights on projects that are related to this Initiative.

Box 1. Relationship between the Belt and Road Initiative and Chinese outward steel investments

The Belt and Road Initiative (hereafter, BRI) is a Chinese diplomatic and strategic policy to connect Asia with Africa and Europe via land and maritime networks. The stated aim is to improve regional integration, increase trade and stimulate economic growth (**European Bank for Reconstruction and Development, 2022^[27]**). According to the Chinese government, by the end of 2019 a total of 137 countries and 30 international organisations had signed 199 co-operation agreements with China to implement BRI (**National Development and Reform Commission (NDRC), 2022^[28]**).

It is difficult to ascertain the precise relationship between BRI and Chinese outward steel investments because there is no official list of steel projects directly related to BRI (Forbes, 2022^[29]). In general, there are many projects in which China provides financial assistance/financing, and Chinese companies receive orders or Chinese companies act as operating partners. Some of the projects are funded by local governments, and the Chinese company simply acts as a contractor (JTTRI, 2022^[30]).

Foreign steelmaking projects involving Chinese companies

ECONOMIES	COMPANY	OWNER (ECONOMIES)	EQUIPMENT	CAPACITY	STATUS	START
Egypt	Xin Feng Resources Recycling Investment Holdings	Xin Feng Resources Recycling Investment Holdings (China) Chengdu Building Material Institute (China)	EAF	2000	plan	N.A.
Kenya	Sinosteel	Sinosteel (China)	Steelmaking	1000	plan	N.A.
Zimbabwe	Tsingshan Holding Group	Tsingshan Holding Group (China)	EAF	1200	underway	2022
Zimbabwe	Tsingshan Holding Group	Tsingshan Holding Group (China)	EAF	1000	plan	N.A.
Indonesia	Dexin Steel Indonesia	Delong Holdings (China)/ Shanghai Decent Group (China)/ PT. Indonesia Morrow all Industrial Park (Indonesia)	BOF	2500	plan	N.A.
Indonesia	PT Gunung Raja Paksi	Gunung Steel Group (Indonesia) Nanjing Iron & Steel (China)	EAF	500	plan	N.A.
Indonesia	Fuhai Group & Ansteel Group	Fuhai Group (China)/ Ansteel Group (China)	Steelmaking	1750	plan	N.A.
Indonesia	Hebel Bishi Steel Group	Hebel Bishi Steel Group (China)/ PT Seafaer Kawasan Industry (Indonesia)	Steelmaking	3000	plan	N.A.
Indonesia	PT Gunung Raja Paksi	Gunung Steel Group (GSG) (Indonesia)/ Shenwu Technology Corp (China)	Steelmaking	3000	plan	N.A.
Cambodia	Xinjiang Bayi Nanjiang Steel Baicheng Co Ltd-Aksu	Baowu Steel Group Corporation (China)	BOF	3100	plan	N.A.
Myanmar	Kunming Steel	Kunming Iron and Steel Group Company (KISC) (China)	BOF	4000	plan	N.A.
Malaysia	Eastern Steel Sdn Bhd	Hap Teck Venture (HYVB) (Malaysia)/ Orient Steel Investment (China) Chinaco Investment (China)	Steelmaking	1300	plan	N.A.
Malaysia	Sarawak Iron and Steel	Hebei Xinwu Steel Group (China)/ MCC Overseas Ltd (China)	BOF	10000	underway	2024
Philippines	Philippine Iron and Steel Project	SteelAsia Manufacturing (Philippines)/ HBIS (China)/ Huli Investment Fund Management Co.,Ltd (China)	Steelmaking	4500	plan	2023
Philippines	Philippine Iron and Steel Project	SteelAsia Manufacturing (Philippines)/ HBIS (China)/ Huli Investment Fund Management Co.,Ltd (China)	Steelmaking	3500	plan	2026
Philippines	SteelAsia Manufacturing Corporation	SteelAsia Manufacturing (Philippines)/ HBIS (China)	EAF	500	underway	2024
Viet Nam	Viet - Trung Metallurgy Company	Vietnam Steel Corporation (Viet Nam)/ Lao Cai Minerals Company (LAMICO) (Viet Nam)/ Kunming Iron and Steel Corporation (China)	BOF	500	plan	N.A.
Pakistan	Century Steel	Fuzhou Jialitai International Company (China)	?	500	underway	N.A.

Note: Some Chinese outward investments are only related to downstream facilities, such as casting, rolling and finishing. Those types of investments are excluded from this table even if they are related to BRI, as the focus of this report is on crude steelmaking capacity.

Source: OECD

The table above lists steelmaking projects that can be considered related to BRI, according to the OECD Secretariat. These projects are taken from the list of cross-border investments provided later in the paper in section 4; more information on worldwide outward investments is described in the same section. While the data may not represent a full picture of the relationship between BRI and Chinese outward steel investments, it is nevertheless clear that the Chinese steel industry intends to continue increasing its outward investments. Indeed, CISA recently noted that outward investments ease trade tensions and help China maintain its market share of international steel markets (Newsweek, 2022^[31]).

India

Steelmaking capacity in India has been expanding rapidly in recent years. Rapid growth is expected to continue during the following decades given steel demand growth and national targets (see Box 2 for recent developments regarding targets).

India's large steel companies also have their own long-term capacity targets. Tata Steel plans to increase its capacity to 40 mmt over the next ten years from its current level of 20 mmt (The Financial Express, 2022^[32]). For example, Tata Steel plans to add 3.0 mmt of BOF capacity at the Kalinganagar works in Odisha state by FY 2024 (Tata steel, 2022^[33]). In addition, the company is negotiating with Haryana state authorities regarding the establishment of a new steel plant in the region. However, details about this project have not been disclosed yet (Metal Expert, 2021^[34]).

JSW Steel has a target to boost its capacity to 45 mmt by 2031 from its current level of 18 mmt (JSW Steel, 2022^[35]). For instance, JSW Steel is advancing construction of 5 mmt of BOF capacity that will be added to the existing 12 mmt of capacity at its Vijayanagar Works, which is scheduled to start operations in 2024 (JSW Steel, 2022^[36]). In addition, JSW Utkal Steel – a subsidiary of JSW Steel - received an environmental clearance from the local government for the construction of an extremely large greenfield steel plant in Odisha state. The plant's capacity is expected to reach 13.2 mmt, though the construction schedule is still unknown (Kallanish, 2022^[37]).

Jindal Steel and Power (JSPL) announced plans to increase its steelmaking capacity to 50 mmt by 2030 from its current level of 9.6 mmt (Metal Expert, 2021^[38]). For instance, JSPL plans to add steelmaking capacity at its existing steel plant in Angul, in Odisha state. One BOF facility with a capacity of 3.3 mmt is expected to start operations in 2023 and one EAF facility with a capacity of 3.0 mm is planned to start operations by 2025 (Metal Expert, 2021^[39]). Moreover, the company obtained from Andhra Pradesh State Investment Promotion Board a site for construction of a greenfield BOF steel plant in July 2021. The planned capacity of this facility is 2.5 mmt, but the construction schedule is still unknown (Kallanish, 2021^[40]).

ArcelorMittal Nippon Steel India (AM/NS India, formerly known as Essar Steel) plans to increase its steelmaking capacity to 23 mmt by 2030 (Metal Expert, 2021^[38]). For example, the company announced a plan to construct a steel plant in Kendrapada, Odisha. Once completed, this plant is expected to be the biggest (24 mmt) steel plant in India. Operations at the site are scheduled to start in 2028 (Metal Expert, 2021^[41]).

In addition, a number of medium-sized companies are also proceeding their capacity expansions in India. The National Mineral Development Corporation (NMDC)- under the ownership of Ministry of Steel, Government of India,- is constructing a greenfield steelworks in the state of Chhattisgarh, with BOF capacity of 3 mmt. The company has rescheduled the launch of this project many times, and it is now expected to start operations in August 2022 (Metal Expert, 2022^[42]). Godawari Power and Ispat plan to construct a 1.0 mmt BOF at its greenfield plant in Chhattisgarh state. This plant is expected to start operations in 2025 (Kallanish, 2022^[43]). AP High Grade Steel intends to construct two BOFs in Andhra Pradesh state with Liberty steel. This plant will be built in two phases, first with 1 mmt and then with 2 mmt of capacity installations, respectively. The first phase of this project is expected to be completed by 2024 but details about the schedule of the second phase are not yet available (Kallanish, 2021^[44]). Lloyds Metals and Energy plans to construct a new IF with a capacity of 0.25 mmt in Maharashtra state. However, the construction schedule is still unknown (Metal Expert, 2021^[45]).

On the other hand, ArcelorMittal's greenfield project with a capacity of 6.0 mmt in the state of Karnataka is still "currently under review" according to the company's latest annual report for 2021. The description of this project has not changed since 2018 (Arcelor Mittal, 2022^[46]).

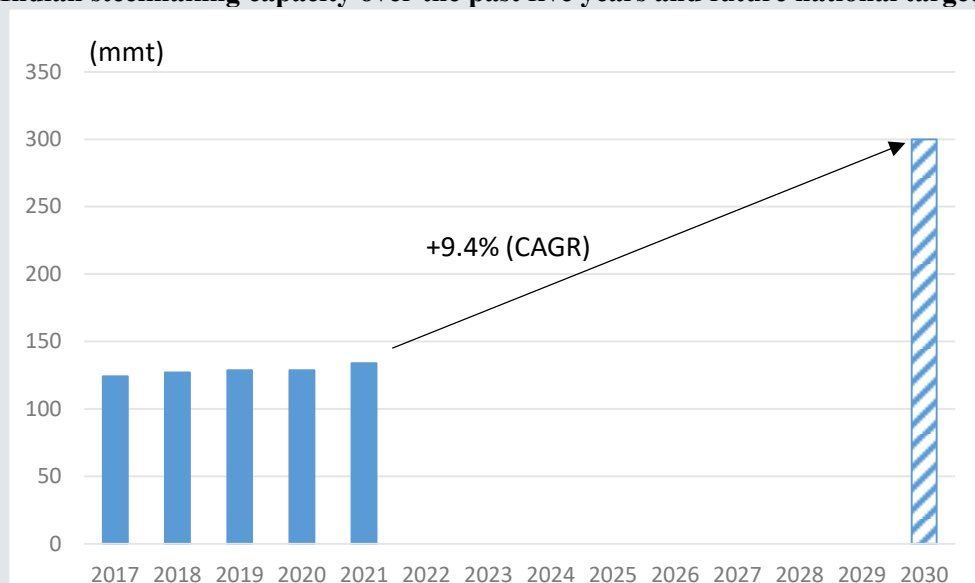
Box 2. Indian long term steelmaking capacity target

Capacity developments in India are relevant for global steel market developments, particularly in light of the size of the country's steel industry, its growth rate and national targets for the long term, in view of the growing domestic demand.

India's Ministry of Steel unveiled the National Steel Policy (hereafter, NSP 2017) in May 2017, which points to rapid growth for the domestic steel industry (Ministry of steel in India, 2022^[47]). This policy envisions **a globally competitive steel industry in India with a crude steel capacity of 300 mmt by 2030-31.**

India's crude steelmaking capacity increased from 120.5 mmt at the end of 2016 to 133.9 mmt in 2021, according to OECD data. Given the pace of crude steelmaking capacity increases observed over the past few years, it would seem challenging for domestic capacity to reach 300 mmt by 2030-31. The possibility of significant further growth in capacity in the period until 2047 were cited by some news sources earlier this year (The Financial Express, 2022^[48]).

Although the extent of the actual capacity increase remains to be seen, it is likely that growth in capacity will be robust during the coming decades given existing expectations of demand growth. As such, it is important to pay close attention to developments and their potential impacts on the global steel industry.

Indian steelmaking capacity over the past five years and future national targets

Note: The growth rates shown are the compound annual growth rates (CAGR). CAGR implies a smooth trajectories, whereas actual capacity will fluctuate.

Source: OECD, Ministry of Steel of India

Implications of recent policy changes for exports

India is the second largest steel producer in the world, and seventh largest exporter with outward shipments of steel amounting to approximately 20 mmt 2021. To ensure stability in global steel markets in the future, it will be important that capacity gains do not significantly overshoot demand developments.

Recent trade policy changes may mitigate exports in the near term, however. India's Ministry of Finance introduced an export duty (15%) on some finished steel products on 21 May 2022, while also abolishing the import duty on some raw materials such as coking coal and coke (Metal Export, 2022^[49]). Please see [DSTI/SC(2022)14] for details on each policy.

Southeast Asia

Steel demand growth is attracting foreign investors to the Association of Southeast Asian Nations (ASEAN) and South Asian regions, with several new investment projects supported by Chinese companies. In some economies, the growth of steelmaking capacity appears to be over local steel demand growth overwhelmingly.

In Viet Nam, the Formosa Ha Tinh steel company plans to add two BOFs with a capacity of 7.0 mmt each to its existing plant. However, the construction schedule is still undisclosed (SEAFI, 2022^[50]). Hoa Phat Group also plans to build two BOFs in Dung Quat Economic Zone. These facilities are expected to start operations in 2025, though the volume of capacity is still unknown (Metal Expert, 2022^[2]).

In Indonesia, Krakatau POSCO plans to add 3.0 mmt of capacity at the Cilegon works in 2025, as a second phase of the expansion. The date when construction on the project will start is still unknown (SEAIISI, 2022^[50]). Dexin Steel, a joint venture between China's Delong Holdings Limited (45%), China's Shanghai Decent Investment Group (43%) and Indonesia's PT Indonesia Morowali Industrial Park (12%) has a target to increase its capacity to 20 mmt in the long term (Metal Expert, 2022^[51]). For example, the company plans to build a BOF with a capacity of 2.5 mmt in Morowali Industrial Park, located in Central Sulawesi province. However, the starting date of this project is undisclosed (Metal Expert, 2022^[2]).

The Philippines is another economy where significant capacity developments are taking place. For instance, China's Panhua Group is building a new 10 mmt BOF in Misamis Oriental province, which is expected to be completed by 2024 (Kallanish, 2022^[52]). In addition, China's HBIS Group, Huili Investment Fund Management, the Philippine's SteelAsia Manufacturing Corporation and PHIVIDEC Industrial Authority intends to set up new steel plants in Misamis Oriental province, eventually leading to steelmaking capacity of 8.0 mmt after the two plants are completed. According to the South East Asian Iron and Steel Institute (SEAIISI), these plants were originally expected to be completed in 2023 and 2026, respectively, however, these projects are under review due to the Covid-19 pandemic (SteelOrbis, 2022^[53]). SteelAsia Manufacturing Corporation is advancing construction on its new 0.5 mmt EAF at the Lemery Works, which is expected to start operations in 2024 (Metal Expert, 2022^[2]). On the other hand, the company decided to postpone indefinitely two steelmaking projects, an EAF at the Davao Works and a 0.8 mmt EAF at the Compostela Works given the impacts of the Russian Federation's (hereafter "Russia")'s large-scale war against Ukraine (Metal Expert, 2022^[54]).

Interesting developments are also occurring in Malaysia. For example, Chinese investors, involving the Metallurgical Corporation, CCCC International Investment Holding and Wenan Iron and Steel, are advancing on the construction of a new integrated steel mill with a capacity of 10 mmt in Samalaju Industrial Park in Sarawak State, which is scheduled to start operations in 2024 (Kallanish, 2022^[52]). The capacity of this project alone exceeds total steel demand in Malaysia in some recent years.³ In addition, Malaysian Kinsteel Company (with an ownership ratio of 45%) and China's Tianjin Qiangbang Industrial (ownership ratio of 40%) plan to construct a new 0.5 mmt IF which is expected to start operations in 2022 (Metal Expert, 2022^[2]).

In Myanmar, Kunming Iron and Steel Group Company plans to build a new 4.0 mmt steelmaking plant. The details of this project have not been specified yet (SEAIISI, 2022^[50]).

Chinese Baowu Steel Group might relocate two steelmaking facilities to Cambodia, with a combined capacity of 3.1 mmt. This would be the first steelmaking operations present in Cambodia, though not many details about this development have been available since 2019 (Mysteel, 2022^[55]).

Japan

In Japan, Chubu Steel Plate plans to replace of existing EAF facility with a more eco-friendly scrap-based EAF in Nagoya city. This new facility is expected to start its operations in 2023 and its steelmaking capacity will remain unchanged (Chubu Steel, 2021^[56]).

Australia

In Australia, Liberty One Steel plans to transform its current 1.2 mmt BOF to 1.8 mmt DRI-based EAF at its Whyalla works and enhance its energy efficiency. The completion date of

this project is undisclosed (Liberty Steel, 2021^[57]). GFG Alliance, the parent company of Liberty Steel, has ambitions to become carbon neutral by 2030 and this project is expected to support these goals (GFG alliance, 2021^[58]).

Rest of Asia

In Pakistan, several new steelmaking projects began operating in 2021 and there are still some steelmaking projects that are underway or planned. However, all the projects described below do not have clear construction schedules.

Century Steel – the subsidiary of Chinese Fuzhou Julitaihe International Company – is proceeding with the construction of a steelmaking plant with a capacity of 0.5 mmt in Khyber Pakhtunkhwa province as a part of China-Pakistan Economic Corridor (CPEC). Details on the steelmaking technology and the starting date of operations were still not available at the time of writing (Metal Expert, 2021^[59]). FF Steel is advancing construction on a new IF facility with a capacity of 0.25 mmt at its Lahore works. The completion date of this project is still unknown (Metal Expert, 2021^[60]). Also, the company plans to set up a steelmaking plant in Karachi, though details of this project have not been disclosed (Metal Expert, 2021^[61]). Naveena Steel plans to add an IF facility with a capacity of 0.1 mmt to its steelmaking operations. The construction schedule of the facility was still not clear in June 2022 (Metal Expert, 2021^[59]). Mughal Steel is constructing three IFs with capacity of 0.4 mmt at the Lahore works, though the starting date of this project is still not known (Metal Expert, 2021^[62]).

3.3. Commonwealth of Independent States

In the Commonwealth of Independent States (CIS) region, several investments are proceeding in 2022, particularly in Russia despite the sharp steel demand decline due to the effects of its war against Ukraine.

In Ukraine, Metinvest originally had planned to construct a new 4.5 mmt EAF to replace some existing OHF facilities at its Mariupol or Zaporizhzhya works within 7-10 years. However, the prospect of this project is now seriously challenged because of the devastation due to Russia's war against Ukraine. According to the company, crude steel production in Ukraine is expected to decline by at least two-thirds in the next two years (2022-23) (Kallanish, 2022^[63]) (Metal Expert, 2021^[64]).

Elsewhere in the region, Namangan Metallurgiya Zavodi (NMZ) started operating a new 0.3 mmt EAF in Chust District in Uzbekistan in the first quarter of 2022, which is the country's second steelmaking facility (Metal Expert, 2022^[65]).

Taking only the projects that are underway into account, steelmaking capacity in the CIS could increase by 2.8 mmt (+1.9%) in the period 2023-25, to a level of 147.9 mmt in 2025.

3.4. Europe

Steelmaking capacity in Europe, a regional aggregate that extends beyond the European Union to include economies in so-called "Other Europe" such as Türkiye, could increase from 291.5 mmt in 2022 to 296.9 mmt by 2025 (+1.9%), based on information available on investments that are underway but excluding planned projects.

In the United Kingdom, the mayor of Tees Valley announced a plan to develop an EAF on the South Tees Development Corporation (STDC) site in 2020. However, further details of this project, such as the capacity level, are still not available (Metal Expert, 2020^[66]).

In addition, numerous eco-friendly projects are proceeding in Europe. In Austria, Voestalpine is on schedule with the construction of a new EAF plant with capacity of 0.21 mmt, which is scheduled to start operations in the third quarter of 2022. According to the company, this EAF will consume only electricity generated from renewable sources (Voestalpine, 2022^[67]). In Spain, ArcelorMittal Gijón plans to construct a new 1.1 mmt DRI-based EAF to transit from an existing BOF. This EAF is scheduled to start operations in 2025 (ArcelorMittal, 2021^[68]). In Belgium, ArcelorMittal Gent plans to construct two new DRI-based EAFs to replace the existing BOF facility (ArcelorMittal, 2021^[69]). In Sweden, H2 Green Steel plans to build a new low-emissions EAF plant with a capacity of 5.0 mmt. The construction of this facility is expected to start by the middle of 2022 and begin operations in 2025 (H2 Green Steel, 2022^[70]) (Kallanish, 2021^[71]). In Italy, Acciaierie d'Italia (formerly known as ArcelorMittal Italia) plans to replace an existing BOF with two DRI-based EAFs by 2025 in Taranto, but the capacity of these new EAFs is still unknown (Metal Expert, 2020^[72]) (Kallanish, 2022^[73]). In France, ArcelorMittal Dunkirk and Fos-sur-Mer plans to construct a new EAF, which is expected to start operations in 2027. However, information on the impact on capacity is still not available (ArcelorMittal, 2022^[74]). In Romania, Liberty Galati plans to replace an existing 3.2 mmt BOF to two DRI-based EAFs with a capacity of 4.0 mmt. This mill will initially use natural gas and eventually switch completely to hydrogen. However, its completion schedule is still unknown (Libertysteel, 2022^[75]).

In Türkiye, Asil Celik completed the addition of 0.18 mmt of capacity to its existing 0.55 mmt of capacity at its Bursa Works in May 2022 (Metal Expert, 2022^[76]). Kardemir Haddecilik - originally a re-roller - also started operating a new 1.25 mmt EAF in Izmir province in May 2022 (Kallanish, 2022^[77]). Izmir Demir Celik began to construct a new EAF with capacity of 1.4 mmt in Izmir province. This project is scheduled to become operational in 2023 (Metal Expert, 2022^[78]). In addition, Tosyali Holding is constructing two EAFs with a capacity of 4 mmt in total in Iskenderun, Hatay. The start-up date of this facility is scheduled for 2023 (Kallanish, 2021^[79]) (Primetals Technologies, 2021^[80]) (Metal Expert, 2022^[78]).

3.5. Latin America

In Bolivia, Empresa Siderurgica del Mutun is moving forward with the construction of a new EAF plant with a capacity of 1.0 mmt in El Mutún, Santa Cruz as Bolivia's second steelmaking plant. The completion date of this project is scheduled for 2023 (Metal Expert, 2022^[81]). This project is supported by China's Sinosteel Equipment, which would help with the construction of the facilities, conduct trial runs and provide operational assistance (Sinosteel Equipment, 2021^[82]). Bolivia became a steel-producing economy in 2021, with a plant installed to meet local demand.

In Brazil, Grupo Simec plans to upgrade its existing EAF capacity at its Cariacica plant from its current level of 0.6 mmt to 0.8 mmt. There is still uncertainty regarding when this upgrade would be started (Kallanish, 2020^[83]) (Metal Expert, 2020^[84]). The company began to upgrade an existing EAF from its current capacity level of 0.5 mmt to 1.2 mmt at its Pindamonhangaba plant. The completion of construction is scheduled for 2023 (Kallanish, 2022^[85]). In addition, Usiminas plans to construct a new BOF facility in Minas Gerais to replace an old existing BOF. The completion date for this project is scheduled for 2023, and its steelmaking capacity will remain unchanged (Danieli, 2021^[86]). ArcelorMittal is adding 1.0 mmt capacity to an existing BOF at the Monlevade works. This capacity expansion is scheduled to be completed in the second half of 2024 (ArcelorMittal, 2022^[87]).

Taking into account the projects that are underway, steelmaking capacity in Latin America would increase by 1.7 mmt to a level of 80.0 mmt in 2025 in the absence of any closures.

3.6. Middle East

Steelmaking capacity has been increasing in the Middle East for several years despite delays in many projects due to the Covid-19 pandemic and economic sanctions affecting some economies. The strong growth is expected to continue in 2022 and over the next three years (2023-25), mainly due to capacity expansions in Iran, and through one project in Saudi Arabia and two projects in Iraq. Steelmaking capacity could increase by 5.2 mmt to 102.8 mmt in 2023-2025 (+5.3%) from its level in 2022 if all the projects that are underway come on stream, and in the absence of closures. However, capacity gains will be considerably higher if any of the projects that are currently in the planning stages actually realize.

Looking at developments in Iran, four projects started their operations in the first half of 2022. Rad Hamadan Steel started operating three Ifs (0.45 mmt in total) in Hamadan province in February 2022 (Metal Expert, 2022^[88]). Arvand Jahanara Steel began operating a new 1.2 mmt EAF plant in Khuzestan Province in the first quarter of 2022. The company plans to build another EAF with the same amount of capacity in the same area, but its construction schedule is still undisclosed (Metal Expert, 2022^[89]). Kabkan Steel started operating a new 0.15 mmt EAF in Razavi Khorasan province in March 2022. This project aims to reduce billet imports, and to balance semis and finished products volumes (Metal Expert, 2022^[90]). Shahrood Steel started operation of a new 0.1 mmt IF in Semnan province in early 2022 (Metal Expert, 2022^[91]).

There are numerous projects currently underway in Iran that will start operations after the second half of 2022. Ghaenat Steel is continuing construction of a new 0.8 mmt DRI-based EAF, with operations scheduled to start in the second half of 2022 (Metal Expert, 2022^[92]). Neyriz Ghadir Steel is approaching completion of its new 1.0 mmt EAF in Fars province. The start date of this facility, originally planned for the fourth quarter of 2021, has been postponed to the third quarter of 2022 (Metal Expert, 2022^[93]). Arfa Iron and Steel Company is upgrading an existing EAF plant from its current level of 0.8 mmt to 1.0 mmt. It is scheduled to start operations in the third quarter of 2022 in Yazd province. As a result of this capacity expansion, the company plans to increase export sales, especially to Asia (Metal Expert, 2022^[94]). Miyaneh Steel is moving forward with a new 0.8 mmt DRI-based EAF construction in East Azerbaijan. It is behind the original schedule and expected to start operations in the fourth quarter of 2022 (Metal Expert, 2022^[95]).

Iran Alloy Steel Company (IASCO) is proceeding with the construction of a new 1.0 mmt EAF, and this facility is expected to start operations in 2023 (Metal Expert, 2022^[96]). Sefid Dasht Steel, which is a part of Mobarakeh Steel, is proceeding with the construction of a new EAF with the capacity to produce 1.0 mmt of crude steel. The planned start date for this facility is the third quarter of 2022 (Metal Expert, 2022^[97]). Kavir Steel put off the start of operation of a new 0.15 mmt IF in Isfahan province from 2022 to the second quarter of 2023 due to pandemic (Metal Expert, 2022^[98]). Sepid Farab Kavir Steel is advancing construction on its new 0.8 mmt EAF in Isfahan province. This facility is expected to start operation in the first quarter of 2024 (Metal Expert, 2021^[99]). Khuzestan Steel is constructing a new 1.0 mmt EAF in Shadegan, Khuzestan, and operations expected to start in 2023 (Metal Expert, 2021^[100]). Khayyam Steel is advancing construction on a new DRI-based EAF plant with the capacity to produce 0.5 mmt of crude steel and its operation is expected to begin in 2023 (Metal Expert, 2021^[101]). Jahan Foolad Sirjan Steel is advancing construction on its new 1.3 mmt DRI-based EAF in Kerman province. This facility is expected to start operation in 2024 (Metal Expert, 2021^[102]). GolGohar Mining & Industrial is constructing a new 1.3 mmt DRI-based EAF plant in Kerman province, which is expected to start operations in 2024 (Metal Expert, 2021^[102]). B-MISCO is building a new EAF plant

with a capacity of 0.8 mmt; however, the construction schedule of the facility was still not clear in June 2022 (Metal Expert, 2021_[100]). Sabzevar Steel continues to move ahead with the construction of a new EAF plant in Razavi Khorasan province, with the capacity to produce 0.8 mmt of crude steel. Construction activity on this facility has been slower than originally planned, and it is still uncertain as to when the project will be completed (Metal Expert, 2021_[103]).

In addition to the projects that are currently underway described above, a number of other projects are in the planning stages in Iran. Gohar Zamin Iron Ore Company obtained a license to build a 3.0 mmt DRI-based EAF in Kerman province. The start-up date of this facility is still undisclosed (Metal Expert, 2021_[104]). Bonab Steel plans to construct a new EAF with a capacity of 1.45 mmt in Bonab city, East Azerbaijan province, noting that the project will be implemented by 2025 and will be export-oriented in view of the plant's proximity to Türkiye and Iraq (Metal Expert, 2021_[105]). East Kaveh Steel plans to build a new DRI-based EAF with a capacity of 1.0 mmt in Razavi Khorasan province. The start-up date for this facility has not yet been announced (Metal Expert, 2022_[106]). Kavand Nahan Zamin (KNZ) plans to build a DRI-based EAF with a capacity of 0.1 mmt in Kerman province. However, the timeline for this capacity expansion is still not known (Metal Expert, 2021_[107]). Eghlid Pars Steel announced a plan to build a 1.0 mmt EAF in Fars province. This project was originally considered in 2010, but the timeline was prolonged for an extended period of time due to financial issues. The planned completion date of this project is still not known (Metal Expert, 2022_[108]). Khouzestan Oxin Steel plans to start the construction of a new 1.2 mmt EAF in the third quarter of 2022, and this plant is expected to start operations in 2025 (Metal Expert, 2022_[109]).

Assuming that all projects that are currently underway are completed as scheduled, Iran's nominal crude steelmaking capacity could reach 67.3 mmt by 2025, i.e. an increase of about 8% compared to the capacity level of 62.1 mmt expected at the end of 2022.

Elsewhere in the region, Van Steel is advancing construction on its new 0.75 mmt EAF in Kurdistan region in Iraq. The start date of this facility has been postponed to the fourth quarter of 2022 from the first quarter of 2022 (Metal Expert, 2022_[110]). State Company for Iron & Steel (SCIS) is constructing a new EAF with a capacity of 0.5 mmt, and this facility is expected to start operations in 2022 (Metal Expert, 2022_[111]). In Saudi Arabia, Madina Metal (formerly known as Al-Rajhi Metal) is installing a new 0.3 mmt IF in Riyadh. The start date for this facility was rescheduled again from the first quarter of 2022 to the third quarter of 2022 (Metal Expert, 2022_[112]).

3.7. North America

Steelmaking capacity in North America has been gradually increasing on the back of several years of steady demand growth. In particular, several new investments are proceeding in the United States and Canada to meet stable demand. Nucor began operating a 1.27 mmt EAF in Ghent, Kentucky in April 2022 (Metal Expert, 2022_[113]). The company is also constructing an EAF plant with a capacity of 1.09 mmt in Brandenburg, Kentucky. It is expected to start operations on schedule during the fourth quarter of 2022 (Metal Expert, 2022_[114]). In addition, Nucor plans to build a new EAF facility with a capacity of about 0.5 mmt in the Western United States. This facility is expected to start operations in 2024, though details of the plant's location have not been specified yet (Kallanish, 2021_[115]) (Metal Expert, 2021_[116]). Furthermore, the company announced a plan to construct two EAFs with a capacity of about 2.7 mmt in West Virginia. This project, which is scheduled for completion in 2024, aims to meet growing demand for steel from the automotive industry (Metal Expert, 2022_[117]) (Kallanish, 2022_[118]).

U.S. Steel plans to construct a new EAF facility with a capacity of 2.72 mmt, which is scheduled to start its operations in 2024. The company continues to search for a location for this project (US Steel, 2021^[119]).

Australia's BlueScope Steel is continuing to build a new 0.85 mmt EAF in Delta, Ohio. This facility is scheduled for completion in the third quarter of 2022 (Metal Expert, 2022^[2]).

Steel Dynamics began operating a new EAF with a capacity of around 2.7 mmt in Sinton, Texas in February 2022 (Kallanish, 2022^[120]). In addition, Commercial Metals Company is advancing construction on its new EAF in the state of Arizona with a capacity of about 0.45 mmt, which is scheduled to start operations in 2023 (Commercial Metals Company, 2022^[121]). Pacific Steel Group has announced plans to build a 0.3 mmt steelmaking facility in California. This facility is expected to begin operations in 2025 and will use renewable energy sources, according to the company (Pacificsteelgroup, 2022^[122]). AM/NS Calvert⁴ is proceeding with the construction of a new EAF with capacity of 1.5 mmt in Alabama, which is expected to start operations in the first half of 2023 (ArcelorMittal, 2022^[87]).

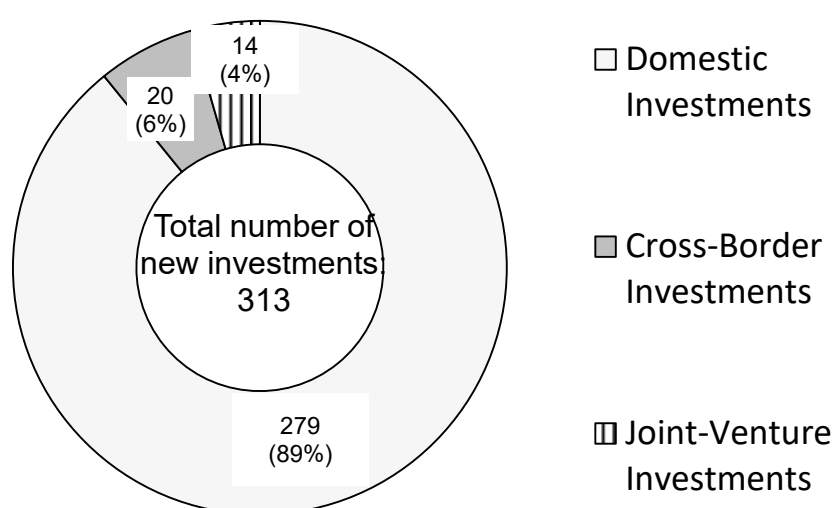
In Canada, Gerdau is adding about 0.2 mmt of capacity to an existing EAF in Ontario province. This capacity addition is expected to be completed in the second half of 2022 (Metal Expert, 2022^[123]). Algoma Steel plans to transform its current 3.7 mmt BOF into a 3.7 mmt scrap-based EAF by 2024, in Ontario province (Algoma Steel, 2022^[124]). In addition, ArcelorMittal Canada unveiled a plan to replace existing BF-BOF facilities with twin DRI-based EAFs with a total capacity of 2.4 mmt in the province of Ontario. This new facility configuration is scheduled to be in operation by 2028. The company notes that the Government of Canada is investing 400 million Canadian dollars in the project (ArcelorMittal, 2021^[125]).

As a result of these changes, steelmaking capacity in the North American region could increase by 2.0 mmt (+1.2%) in 2025 compared to the level in 2022, taking into account investment projects that are current underway. This would lead to a rise in the level of North America's steelmaking capacity to 165.8 mmt by the end of 2025.

4. The latest developments in cross-border investments

Figure 5 shows the share of domestic and cross-border (greenfield) investments in steelmaking capacity. In total, there are 313 new steelmaking capacity projects around the world, classified as either underway or planned, which are scheduled to become operational in 2022 or later. This broad number includes projects that have already started operations in 2022, as well as projects for which the start date is not available. Of these projects, domestic steelmakers are the investors/owners in 279 (89%) of the cases. Of the remaining steelmaking capacity projects, 20 (6%) entail cross-border investments, representing an investment that is based wholly on one or on several foreign investors/owners, and 14 (4%) are structured as joint ventures (JV) between domestic and foreign investors/owners.

Figure 5. The share of domestic and cross-border investments in new steelmaking capacity projects starting in 2022 or later



Note: This figure includes all new investment projects that are underway or planned, and which are scheduled to become operational in 2022 or later — including projects that have started operation in 2022, 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 3 lists the cross-border investments by region. Asia is the largest investment destination, accounting for 12 cross-border and 13 joint venture (JV) investments between domestic and foreign investors. Africa attracts four cross-border and one JV investment. North America is the destination of four cross-border investments. The CIS, Europe, Latin America, Middle East and Oceania regions currently do not have any cross-border investments or JV investments.

Table 3. Domestic and cross-border investments in new steelmaking capacity projects

Started in 2022, and underway and planned investments for 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	9	8.9	4	5.2	1	n.a.
Asia	125	276.8	12	66.9	13	25.5
CIS	16	16.9	0	0.0	0	0.0
Europe	17	18.3	0	0.0	0	0.0
Latin America	6	8.0	0	0.0	0	0.0
Middle East	94	86.5	0	0.0	0	0.0
North America	11	18.2	4	2.4	0	0.0
Oceania	1	0.6	0	0.0	0	0.0
World Total	279	434.3	20	74.4	14	25.5

Note: This table includes all new investment projects that are, underway or planned, and which are scheduled to become operational in 2022 or later — including projects that have started operation in 2022, 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

Table 4 provides a two-way matrix of the cross-border and joint venture investments by economy. Chinese companies are involved in 13 cross-border investments and participate in nine JV investments abroad. Asia is still the most attractive region for Chinese companies, with Indonesia as the destination for four Chinese cross-border investments (19.25 mmt in total) and four Chinese JV investments (9.0 mmt in total).

Regarding other investments, two Chinese Taipei companies and a Japanese company are jointly investing in two cross-border projects in Viet Nam. Companies from India, Australia, Japan, Luxembourg, and the United Kingdom each have one cross-border investment in the United States. Investors from Luxembourg have one cross-border investment in India. One Indian company is involved in a joint venture project with a Bhutanese counterpart. Investors from Korea and the United Arab Emirates have one joint venture project each, with companies in Indonesia and Algeria, respectively. In addition, an investor from the United Kingdom has two joint venture projects with a company in India.

¹ Sub-sections 3.4 and 3.7 offer further details about these investments.

² The capacity swap ratio for environmentally sensitive regions is 1.5:1. The ratio for other regions is 1.25:1. However, there are two exceptions to this regulation: 1. The swap ratio for new capacity is 1.25:1 in environmentally sensitive regions, and 1.1:1 in other regions when the capacity is acquired through mergers and acquisitions. 2. The swap ratio for new capacity is 1:1 when the new steel-making facility is environmentally friendly.

³ According to the worldsteel, apparent steel use in Malaysia was 9.2 mmt and 6.8 mmt in 2019 and 2020, respectively.

⁴ AM/NS Calvert is a 50/50 joint venture between ArcelorMittal and Nippon Steel.

Table 4. Cross-border and joint venture investments in new steelmaking capacity projects

A. Cross-Border Investments

		Location of Investments																							
		Africa						Asia																	
		Zimbabwe		Egypt		Kenya		Cambodia		India		Malaysia		Indonesia		Myanmar		Viet Nam		Philippines		Pakistan		United States	
Origins of Investments: firm based in		Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)
Asia	China	2	2.2	1	2.0	1	1.0	1	3.1			1	10.0	4	19.25	1	4.0			1	10.0	1.0	0.5		
	Chinese Taipei																	2	14.0						
	India																							1	n.a.
	Japan																	2	14.0					1	1.5
Europe	Luxembourg									1	6.0													1	1.5
	United Kingdom																							1	n.a.
Oceania	Australia																							1	0.9

B. Joint Venture Investments

		Location of Investments													
		Africa		Asia											
		Algeria		India		Bhutan		Indonesia		Malaysia		Viet Nam		Philippines	
Foreign JV partner: firm based in		Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)	Number	Capacity (mmt)
Asia	China							4	9.0	1	1.3	1	0.5	3	8.5
	India					1	0.2								
	Korea							1	3.0						
Middle East	UAE	1	n.a.												
Europe	United Kingdom			2	3.0										

Note: Capacity figures are in millions of metric tonnes. These tables include all new investment projects that are underway or planned, and which are scheduled to become operational in 2022 or later — including projects that have started operation in 2022, 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

5. Conclusions

Global steelmaking capacity continues to increase at a rapid pace in a period of weakening steel market conditions. A total of 313 steel investment projects are either currently underway or in the planning stages around the world. The three-year period of 2023-25 alone will see an additional 53.5 mmt of capacity coming on stream, with an additional 90.8 mmt potentially being added according to announced plans by steel companies. In total, therefore, gross capacity additions could amount to 144.3 mmt globally from 2023 to 2025.

In some parts of the world experiencing rapid growth in capacity, many of the projects are based on the coal-intensive production process. Of the total 144.3 mmt of capacity potentially coming on stream during 2023-25, BOF projects account for 83.8 mmt (58.1% of the total) while EAF projects make up 53.0 mmt (36.8%) of the total, with the technology of the remaining projects not completely certain at the time of writing.

Excess capacity is a structural issue that continues to dampen prospects for the global steel industry. Governments and industry stakeholders should ensure that capacity investments are driven by market considerations and, given the longevity of the steel plants installed, make sure that the investments will be sustainable in the long run. For example, the installation of very large, integrated plants, described in this report, raise questions about their economic viability if demand conditions turn out to be less favourable than expected, but also whether they are in line with local emissions targets. As the industry makes the transition to lower-carbon steel production, it will be important to share best practices on ways to promote the transition without exacerbating excess capacity and creating further problems for the industry.

The OECD Steel Committee will continue to monitor steelmaking capacity developments and publish its results twice a year. The aim is to raise public awareness of capacity trends and any emerging risks associated with these trends.

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

Table 5. Investment data

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Africa	Algeria	Annaba	Emarat Dzayer Steel Company	Imetal Group (Algeria)/ Emarat Dzayer Group (UAE)	EAF	?	plan	?	Metal Expert
Africa	Algeria	Oran	Tosyali Holding	-	EAF	2000	plan	2023	Company HP (tenova)
Africa	Algeria	Berrahal	ETRHB	-	EAF	1150	plan	?	Company HP (Danieli); Metal Expert
Africa	Egypt	Sokhna, Suez	EZZ Steel	-	EAF	850	under way	2022	World Steel Capacities
Africa	Egypt	Ain Sokhna	Arabian Steel Industries	-	Steelm aking	1000	plan	?	Metal Expert
Africa	Egypt	Suez	Xin Feng Resources Recycling Investment Holdings	Xin Feng Resources Recycling Investment Holdings (China) Chengdu Building Material Institute (China)	EAF	2000	plan	?	Metal Expert
Africa	Kenya	?	Sinosteel	Sinosteel (China)	Steelm aking	1000	plan	?	Metal Expert; Ministry of Industry, Trade and Cooperatives of Kenya
Africa	Morocco	Jorf Lasfar	Riva Industries	-	EAF	800	under way	2022	Metal Expert
Africa	Mozambique	Tete	Baobab Resources	-	EAF	500	under way	?	World Steel Capacities, WM
Africa	Namibia	Oshikango, Ohangwena region	Groot Group	-	EAF	1000	under way	2022	Company HP, Metal Expert

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Africa	Nigeria	Kogi state	Ajaokuta Steel Company (ASC)	-	BOF	1300	plan	?	World Steel Capacities; CompanyHP
Africa	Nigeria	Kwara	Kam Industries	-	IF	260	under way	2022	Metal Expert
Africa	Zimbabwe	Chivhu	Tsingshan Holding Group	Tsingshan Holding Group (China)	EAF	1200	under way	2022	kallanish
Africa	Zimbabwe	Chivhu	Tsingshan Holding Group	Tsingshan Holding Group (China)	EAF	1000	plan	?	kallanish
Asia	China	Zijin Country, Guangdong	Heyuan Derun Iron and Steel	-	EAF	900	operati ng	2022	Metal Expert, Ministry of Industry, Trade and Cooperatives of Kenya
Asia	China	Linfen City, Shanxi	Shanxi Jinnan Iron and Steel	-	BOF	3400	plan	?	worldmetals
Asia	China	Ningde, Fujian / 福建、寧德	Anshan Iron & Steel	-	Steelm aking	10000	plan	?	Platts
Asia	China	Hanzhong, Shaanxi	Shaanxi Hanzhong Iron and Steel	-	EAF	700	plan	?	陕西发展观察, 汉中时空网
Asia	China	Fangchenggang, Guangxi / 防城港	Jinxi Iron and Steel	-	Steelm aking	?	plan	?	防城港市新闻网
Asia	China	Hebei, Laoting / 河北、樂亭縣	HBIS Laoting Steel Co., Ltd.	-	BOF	7470	plan	?	Platts, Reuters, Company HP
Asia	China	Jiangsu province	Baowu Iron & Steel Group	-	Steelm aking	?	plan	?	MySteel (我的钢铁), Platts, Metal Expert, Government of Jinangsu
Asia	China	?	Baowu Iron & Steel Group	-	Steelm aking	3100	plan	?	Platts
Asia	China	Chengdu City, SicHunan	Chengdu Metallurgy	-	EAF	2000	operati ng	2022	Metal Expert, kallanish
Asia	China	Fujian province	Sanbao Iron and Steel	-	EAF	1500	under way	2024	Metal Expert, kallanish
Asia	China	Hebei province	Tangyin Iron and Steel	-	BOF	2000	under way	?	Metal Expert, kallanish

32 | LATEST DEVELOPMENTS IN STEELMAKING CAPACITY

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Asia	China	Jiangsu province	Zenith Iron and Steel Group	-	BOF	5850	under way	2023	Metal Expert, kallanish
Asia	China	Rizhao City, Shandong	Rizhao Steel Holding Group Co., Ltd.	-	BOF	2700	under way	2022	Metal Expert
Asia	China	Dazhou City, Sichuan	Sichuan Dazhou Iron and Steel	-	BOF	2300	plan	2024	Metal Expert, kallanish
Asia	China	Fuzhou City, Fujian	Luoyuan Mingguang Steel	-	BOF	1250	plan	2023	Metal Expert
Asia	China	Linyi, Shandong	Linyi Iron and Steel Investment Group Special Steel	-	BOF	2700	under way	2022	Metal Expert
Asia	China	Tianjin City, Tianjin	Rockcheck Iron and Steel	-	EAF	500	under way	2022	Metal Expert
Asia	China	Tangshan City, Hebei	Tianzhu Iron and Steel	-	BOF	2870	under way	2022	Metal Expert
Asia	China	Qinhuangdao City, Hebei	Changli Hongxing Industry	-	BOF	3450	under way	2022	Metal Expert
Asia	China	Yuxi City, Yunnan	Xianfu Iron and Steel	-	BOF	2600	under way	2023	Metal Expert
Asia	China	Shijiazhuang, Hebei	Jingye Iron and Steel	-	BOF	1500	under way	?	Metal Expert
Asia	China	Linfen City, Shanxi	Tongcai Industry and Trade	-	BOF	2000	under way	2022	Metal Expert
Asia	China	Linfen City, Shanxi	Tongcai Industry and Trade	-	EAF	780	under way	2022	Metal Expert
Asia	Indonesia	Morowali Industrial Park, Central Sulawesi province	Dexin Steel Indonesia	Delong Holdings (China)/ Shanghai Decent Group (China)/ PT. Indonesia Morowali Industrial Park (Indonesia)	BOF	2500	plan	?	Metal Expert, kallanish
Asia	Indonesia	Cilegon, West Java	Krakatau POSCO	POSCO (South Korea)/ Krakatau Steel (Indonesia)	BOF	3000	plan	2025	SEASI Presentation, Metal Expert. Company HP
Asia	Indonesia	Medan, North Sumatra	PT Gunung Raja Paksi	Gunung Steel Group (Indonesia) Nanjing Iron & Steel (China)	EAF	500	plan	?	Platts, Metal Expert, Company HP
Asia	Indonesia	Central Sulawesi	Anshan Iron & Steel Group Corporation	-	Steelmaking	5000	plan	?	Platts

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Asia	Indonesia	Ujung Jabung, Jambi, Sumatra	Fuhai Group & Ansteel Group	Fuhai Group (China)/ Ansteel Group (China)	Steelm aking	1750	plan	?	The Jakarta Post
Asia	Indonesia	Kendal, Central Java	Hebel Bishi Steel Group	Hebel Bishi Steel Group (China)/ PT Sefer Kawasan Industry (Indonesia)	Steelm aking	3000	plan	?	Metal Expert, American Metal Market
Asia	Indonesia	Batulicin (South Kalimantan)	PT Gunung Raja Paksi	Gunung Steel Group (GSG) (Indonesia)/ Shenwu Technology Corp (China)	Steelm aking	3000	plan	?	Metal Expert
Asia	Indonesia	?	Shaanxi Iron and Steel Group	-	Steelm aking	7500	plan	?	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	East Java	Wuhan Iron & Steel (Wugang)	-	EAF	5000	plan	?	Platts
Asia	India	Meramandali, Odisha state	Tata Steel BSL Ltd.	-	BOF	6070	plan	2030	WM
Asia	India	Meramandali, Odisha state	Tata Steel BSL Ltd.	-	EAF	1550	plan	2030	WM
Asia	India	Kalinganagar, Odisha	Tata Steel	-	BOF	3000	plan	2024	Metal Expert
Asia	India	Toranagallu, Karnataka State	JSW Steel Limited	-	BOF	5000	under way	2024	Company HP
Asia	India	Toranagallu, Karnataka State	JSW Steel Limited	-	BOF	1800	plan	2026	WM
Asia	India	Toranagallu, Karnataka State	JSW Steel Limited	-	EAF	1200	plan	2022	WM
Asia	India	Toranagallu, Karnataka State	JSW Steel Limited	-	EAF	?	plan	?	Sarralle
Asia	India	Nagarnar, Chhatt isgarh	NMDC	-	BOF	3000	under way	2022	Company HP
Asia	India	Sindhudurg, Maharashtra	Shree Uttam Steel and Power Ltd	-	BOF	1550	under way	2022	World Steel Capacities

34 | LATEST DEVELOPMENTS IN STEELMAKING CAPACITY

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Asia	India	Sindhudurg, Maharashtra	Shree Uttam Steel and Power Ltd	-	BOF	1550	plan	?	Metal Expert
Asia	India	Gandhidham, Kutch, Gujarat	Mono Steel (India) Ltd.	-	IF	?	under way	2022	World Steel Capacities
Asia	India	Himachal Pradesh, Himachal Pradesh	Crest Steel (Una) Pvt. Ltd.	-	IF	?	plan	2022	Metal Expert, World Steel Capacities
Asia	India	Kharagpur, West Bengal	Ramsarup Lohh Udyog Limited (RLUL)	-	EAF	700	plan	?	World Steel Capacities
Asia	India	Hindula	Brand Steel and Power Ltd	-	EAF	450	plan	2025	WM
Asia	India	Ramgarh, Jharkhand	Aloke Steel Industries	-	EAF	70	plan	2030	WM
Asia	India	?	Ankur Udyog Limited	-	EAF	250	plan	2032	WM
Asia	India	Rangarddy, Andhra Pradesh	Texcon Steels Ltd	-	EAF	130	plan	2030	WM
Asia	India	?	Ultra Mega Steel Project	-	BOF	9000	plan	2025	WM
Asia	India	Versamedi,Guja rat	Welspun Power and Steel Ltd (WPSL)	-	BOF	3100	plan	2030	WM
Asia	India	Versamedi,Guja rat	Welspun Power and Steel Ltd (WPSL)	-	BOF	3300	plan	2030	WM
Asia	India	Koppal, Karnataka	Xindia Steels	-	BOF	2500	plan	2036	WM
Asia	India	Koppal, Karnataka	Xindia Steels	-	BOF	2500	plan	2029	WM
Asia	India	Koppal, Karnataka	Kalyani Steel	-	BOF	500	plan	2025	WM
Asia	India	Koppal, Karnataka	Kalyani Steel	-	EAF	40	plan	2025	WM
Asia	India	Yadgir, Karnataka	Kalyani Steel	-	BOF	3000	plan	2030	WM
Asia	India	Raturia, Durgapur	KIC Metaliks	-	EAF	380	plan	2025	WM
Asia	India	Gollapuram, Andhra Pradesh	Knovus Steels and Infrastructure	-	EAF	150	plan	2030	WM
Asia	India	Karakhendra, Jharkhand	Rungta Mines Limited (RML)	-	EAF	110	plan	2030	WM
Asia	India	Haveri, Karnataka	Tata Metaliks (TML)	-	BOF	3000	plan	2038	WM

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Asia	India	Lohardaga, Jharkhand	Pawanjay Steel & Power Ltd.	-	EAF	40	plan	2025	WM
Asia	India	Kharagpur, West Bengal	Ramsarup Industries Limited	-	EAF	700	plan	2022	WM
Asia	India	Patratu, Jharkhand	Jindal Steel and Power Ltd. (JSPL)	-	BOF	6000	plan	2034	WM
Asia	India	Patratu, Jharkhand	Jindal Steel and Power Ltd. (JSPL)	-	BOF	6000	plan	2024	WM
Asia	India	Andhra Pradesh	Jindal Steel and Power Ltd. (JSPL)	-	BOF	2500	plan	?	Metal Expert
Asia	India	Karnataka	ArcelorMittal	-	Steelm aking	6000	plan	?	Metal Expert, Company HP(Annual Report 2018)
Asia	India	Chhattisgarh	Godawari Power and Ispat	-	BOF	1000	plan	2025	Metal Expert
Asia	India	Bastar, Chhattisgarh	Tata Steel	-	BOF	5500	plan	2030	WM
Asia	India	Haryana state	Tata Steel	-	?	?	plan	?	Metal Expert
Asia	India	Bileipada near Joda in the Keonjhar district of Odisha	Tata Sponge Iron Ltd	-	BOF	1500	plan	2022	World Steel Capacities
Asia	India	Bileipada near Joda in the Keonjhar district of Odisha	Tata Sponge Iron Ltd	-	EAF	560	plan	2025	WM
Asia	India	Hospet, Karnataka	BMM Ispat Limited	-	BOF	1100	plan	2023	WM
Asia	India	Kendrapara, Odisha	ArcelorMittal Nippon Steel India	-	BOF	24000	plan	2028	World Steel Capacities, SEAI SI
Asia	India	Salboni, West Bengal	JSW Steel Limited	-	BOF	6000	plan	2036	WM
Asia	India	Barenda, Gujarat	JSW Steel Limited	-	BOF	4000	plan	2025	WM
Asia	India	Paradip, Odisha	JSW Steel Limited	-	BOF	3440	plan	2032	WM
Asia	India	Paradip, Odisha	JSW Steel Limited	-	BOF	10050	plan	2026	WM
Asia	India	Kolkata, West Bengal	JSW Bengal Steel	-	BOF	3000	plan	?	World Steel Capacities
Asia	India	Maharashtra	Jindal Maxsteel	-	EAF	1500	plan	?	World Steel Capacities

36 | LATEST DEVELOPMENTS IN STEELMAKING CAPACITY

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Asia	India	Purulia, West Bengal	Jai Balaji Industries Limited (JBIL)	-	EAF	5000	plan	2030	WM
Asia	India	Rourkela, Odisha	Jai Balaji Jyoti Steels	-	EAF	860	plan	2030	WM
Asia	India	Angul, Odisha	Jindal Steel and Power Ltd. (JSPL)	-	BOF	3300	plan	2023	Metal Expert
Asia	India	Angul, Odisha	Jindal Steel and Power Ltd. (JSPL)	-	EAF	3000	plan	2025	Metal Expert
Asia	India	Raigarh, Chhattisgarh	Jindal Steel and Power Ltd. (JSPL)	-	BOF	4000	plan	2023	WM
Asia	India	Jajpur, Odisha	Neelachal Ispat Nigam Limited (NINL)	-	BOF	1000	plan	?	World Steel Capacities
Asia	India	Bellary Taluk, Karnataka	NMDC	-	BOF	5000	plan	2030	WM
Asia	India	Bokaro, Jharkhand	SAIL	-	BOF	8800	plan	2035	WM
Asia	India	sindri, Jharkhand	SAIL	-	BOF	5600	plan	2030	WM
Asia	India	Paradip, Odisha	SAIL	-	BOF	3000	plan	2025	WM
Asia	India	Chhattisgarh	SAIL	-	BOF	3000	plan	2025	WM
Asia	India	Thelkoloi, Odisha	Bhushan Power and Steel Limited (BPSL)	-	BOF	2800	plan	2022	WM
Asia	India	Thelkoloi, Odisha	Bhushan Power and Steel Limited (BPSL)	-	EAF	900	plan	2022	WM
Asia	India	Potka, Jharkhand	Bhushan Power and Steel Limited (BPSL)	-	EAF	3000	plan	2030	WM
Asia	India	Tadipatri Mandal, Anantapur, Andhra Pradesh	Arjas Steel	-	BOF	620	plan	2030	WM
Asia	India	Raigarh, Chhattisgarh	MSP Steel & Power Ltd (MSPSPL)	-	EAF	580	plan	2025	WM
Asia	India	Marakuta, Jharsuguda district in Orissa	MSP Metallics Ltd	-	IF	240	plan	?	World Steel Capacities
Asia	India	Raigarh, Chhattisgarh	Visa Steel	-	EAF	2500	plan	2022	WM
Asia	India	Durgapur, West Bengal	Shyam Steel Industries	-	EAF	320	plan	?	WM
Asia	India	Jharsuguda, Odisha	Action Ispat & Power (P) Ltd.	-	EAF	680	plan	2024	WM

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Asia	India	Mandu, Madhya Pradesh	Chintpurni Steel	-	EAF	300	plan	2023	WM
Asia	India	PURULIA, WEST BENGAL	Ispat Damodar Ltd.	-	EAF	190	plan	2025	WM
Asia	India	Ramgarh, Jharkhand	Jharkhand Ispat Pvt Ltd	-	EAF	70	plan	2030	WM
Asia	India	Dhenkanal, Odisha	Narbheram Power & Steel	-	EAF	670	plan	2030	WM
Asia	India	Keonjhar, Odisha	OSIL (Odisha Sponge Iron)	-	EAF	900	plan	2025	WM
Asia	India	Janjgir, Chhattisgarh	Prakash Industries	-	EAF	1000	plan	2025	WM
Asia	India	Jhargam, West Bengal	Rashmi Metaliks Limited (RML)	-	EAF	350	plan	2022	WM
Asia	India	Bilaspur, Chhattisgarh	Rashi Steel and Power Limited (RSPL)	-	EAF	240	plan	2030	WM
Asia	India	Raipur, Chhattisgarh	Jayaswal Neco Industries Limited	-	EAF	570	plan	2025	WM
Asia	India	Jammalamadug u mandal, Kadapa district, Andhra Pradesh	AP High Grade Steel	AP High Grade Steel (India)/ Liberty steel (United Kingdom)	BOF	1000	plan	2024	Metal Expert, kallanish
Asia	India	Jammalamadug u mandal, Kadapa district, Andhra Pradesh	AP High Grade Steel	AP High Grade Steel (India)/ Liberty steel (United Kingdom)	BOF	2000	plan	?	Metal Expert
Asia	India	Ghugus, Chandrapur district of Maharashtra	Lloyds Metals and Energy	-	IF	250	plan	?	Metal Expert
Asia	India	Paradip, Odisha	JSW Utkal Steel	-	BOF	13200	plan	?	Kallanish
Asia	Bangladesh	Mirsarai economic zone	Star Consortium	-	BOF	2000	plan	?	Company HP
Asia	Bhutan	Samdrup Jongkhar	Druk Metallurgy Limited (DML)	Druk Holding and Investments Limited (DHI) (Bhutan)/ Mr. Dilip Kumar Goenka (Principal Partner of KD Iron and Steel) (India)	IF	200	under way	?	Company HP, Platts
Asia	Cambodia	Preah Vihear, Phnom Penh	Cambodia Iron and Steel	-	BOF	1000	plan	?	WM

38 | LATEST DEVELOPMENTS IN STEELMAKING CAPACITY

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Asia	Cambodia	?	Xinjiang Bayi Nanjiang Steel Baicheng Co Ltd-Aksu	Baowu Steel Group Corporation (China)	BOF	3100	plan	?	Reuters, My steel, SEASI presentation
Asia	Myanmar	Myingyan, Mandalay	Myingyan plant	-	EAF	200	plan	?	World Steel Capacities
Asia	Myanmar	?	Kunming Steel	Kunming Iron and Steel Group Company (KISC) (China)	BOF	4000	plan	?	Metal Expert
Asia	Malaysia	Kemaman, Terengganu	Eastern Steel Sdn Bhd	Hiap Teck Venture (HYVB) (Malaysia)/ Orient Steel Investment (China) Chinaco Investment (China)	Steelm aking	1300	plan	?	SEASI
Asia	Malaysia	Gurun, Kedah	Kinsteel Bhd	-	IF	500	plan	2022	Metal Expert, World Steel Capacities
Asia	Malaysia	Gurun, Kedah	Kinsteel Bhd	-	EAF	500	plan	?	Metal Expert
Asia	Malaysia	Selangor Darul Ehsan	New project by The Lion Group	-	BOF	1600	plan	?	World Steel Capacities
Asia	Malaysia	Sarawak	Sarawak Iron and Steel	Hebei Xinwuan Steel Group (China)/ MCC Overseas Ltd (China)	BOF	10000	under way	2024	Metal Expert, SEASI
Asia	Philippines	Misamis Oriental in northern Mindanao	Philippine Iron and Steel Project	SteelAsia Manufacturing (Philippines)/ HBIS (China)/ Huili Investment Fund Management Co.,Ltd (China)	Steelm aking	4500	plan	2023	SEASI
Asia	Philippines	Misamis Oriental in northern Mindanao	Philippine Iron and Steel Project	SteelAsia Manufacturing (Philippines)/ HBIS (China)/ Huili Investment Fund Management Co.,Ltd (China)	Steelm aking	3500	plan	2026	SEASI
Asia	Philippines	Misamis Oriental province	Panhua Group	-	BOF	10000	under way	2024	Metal Expert
Asia	Philippines	Villanueva, Misamis Oriental	SteelAsia Manufacturing Corporation	-	EAF	500	plan	?	Metal Expert

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Asia	Philippines	Compostela, Cebu	SteelAsia Manufacturing Corporation	-	EAF	800	plan	?	Metal Expert, Company HP, Platts
Asia	Philippines	Lemery, Batangas	SteelAsia Manufacturing Corporation	SteelAsia Manufacturing (Philippines)/ HBIS (China)	EAF	500	under way	2024	Metal Expert
Asia	Philippines	Davao, Mindanao	SteelAsia Manufacturing Corporation	-	EAF	?	plan	?	World Steel Capacities
Asia	Philippines	Bulacan, Central Luzon	SteelAsia Manufacturing Corporation	-	EAF	800	plan	?	Metal Expert
Asia	Philippines	Bulacan, Central Luzon	SteelAsia Manufacturing Corporation	-	EAF	600	plan	?	Metal Expert
Asia	Philippines	Concepcion, Tarlac	SteelAsia Manufacturing Corporation	-	EAF	1200	plan	?	Metal Expert
Asia	Viet Nam	Vung Ang Economic Zone, Ha Tinh province	Formosa Plastics Group	Formosa Plastics Group (Chinese Taipei)/ China Steel Corp (Chinese Taipei)/ JFE Steel (Japan)	BOF	7000	plan	?	SEAISI
Asia	Viet Nam	Vung Ang Economic Zone, Ha Tinh province	Formosa Plastics Group	Formosa Plastics Group (Chinese Taipei)/ China Steel Corp (Chinese Taipei)/ JFE Steel (Japan)	BOF	7000	plan	?	SEAISI
Asia	Viet Nam	Phu My, Ba Ria Vung Tau	Hoa Sen Group	-	EAF	800	plan	?	World Steel Capacities
Asia	Viet Nam	Phu My, Ba Ria Vung Tau	Hoa Sen Group	-	EAF	500	plan	?	World Steel Capacities
Asia	Viet Nam	Cam Gia Quarter, Thai Nguyen City	Viet Nam Steel Corporation	-	BOF	500	plan	?	Metal Expert
Asia	Viet Nam	Tang Loong Industrial Zone in Bao Thang district, Lao Cai province	Viet - Trung Metallurgy Company	Viet Nam Steel Corporation (Viet Nam)/ Lao Cai Minerals Company (LAMICO) (Viet Nam)/ Kunming Iron and Steel Corporation (China)	BOF	500	plan	?	Company HP

40 | LATEST DEVELOPMENTS IN STEELMAKING CAPACITY

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Asia	Viet Nam	Dung Quat Economic Zone, Quang Ngai province	Hoa Phat Group	-	BOF	?	plan	2025	World Steel Capacities
Asia	Viet Nam	Dung Quat Economic Zone, Quang Ngai province	Hoa Phat Group	-	BOF	?	plan	2025	World Steel Capacities
Asia	Pakistan	Faisalabad	Ittehad Steel	-	IF	600	under way	?	Metal Expert
Asia	Pakistan	?	Indus Consortium Mining & Steel Industry	-	BOF	1000	plan	?	World Steel Capacities
Asia	Pakistan	Karachi	Naveena Steel Mills	-	IF	80	plan	?	Metal Expert
Asia	Pakistan	Khyber Pakhtunkhwa province	Century Steel	Fuzhou Julitaihe International Company (China)	?	500	under way	?	Metal Expert
Asia	Pakistan	Lahore, Punjab province	FF Steel	-	IF	250	under way	?	Metal Expert
Asia	Pakistan	Karachi	FF Steel	-	?	?	plan	?	Metal Expert
Asia	Pakistan	Lahore	Mughal Steel	-	IF	395	under way	?	Metal Expert
Asia	Japan	Nagoya	Chubu Steel Plate Co.	-	EAF	700	plan	2023	Company HP
CIS	Azerbaijan	Baku	Baku Steel Company	-	EAF	?	plan	?	Company HP, Metal Expert
CIS	Russia	Usolye- Sibirskoye	Usolye Metallurgical Plant	-	Steelm aking	?	under way	?	Metal Expert
CIS	Russia	Kamensk- Shahtinskiy	Don-Metal	-	EAF	160	plan	2025	Metal Expert, Comments from Russia
CIS	Russia	Hrombur	Hrombur	-	EAF	500	plan	?	Metal Expert
CIS	Russia	Ishimbai	Ishstal plant	-	EAF	300	plan	?	World Steel Capacities
CIS	Russia	?	Don-Metal	-	EAF	160	plan	?	Metal Expert
CIS	Russia	?	United Metallurgical Company (OMK)	-	EAF	1800	under way	2025	Metal Expert
CIS	Russia	Balakovo	Novostal-M	-	EAF	1200	plan	2024	World Steel Capacities
CIS	Russia	Krasny Sulin	Yuzhstal	-	EAF	720	under way	2022	Metal Expert

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
CIS	Russia	Surgut	Surgutskiy MK	-	EAF	100	under way	2022	Metal Expert
CIS	Russia	Rostov	Rostov Electrometallurgical Plant / REMZ	-	EAF	1000	under way	2024	kallanish, Metal Expert
CIS	Russia	Stariy Oskol	Metalloinvest	-	EAF	1200	plan	2023	kallanish
CIS	Ukraine	Zaporizhzhya	Metinvest	-	BOF	3200	plan	2022	World Steel Capacities, Platts
CIS	Ukraine	Zaporizhzhya	Metinvest	-	EAF	4500	plan	2030	Metal Expert
CIS	Ukraine	Donetsk	Donetsksteel	-	EAF	1800	plan	?	Platts, Metal Expert
CIS	Uzbekistan	Namangan	Namangan Steel	-	EAF	300	operati ng	2022	Metal Expert
Europe	Austria	Kapfenberg	Böhler Edelstahl Gmbh	-	EAF	205	under way	2022	Company HP, Metal Expert
Europe	Belgium	Gent	ArcelorMittal	-	EAF	?	plan	2030	Company HP, Metal Expert
Europe	Italy	Taranto	Acciaierie d'Italia	-	EAF	?	plan	?	Metal Expert,Platts
Europe	Italy	Taranto	Acciaierie d'Italia	-	EAF	?	plan	?	Metal Expert,Platts
Europe	Türkiye	Izmir	Kardemir Haddecilik	-	EAF	1250	operati ng	2022	Metal Expert, kallanish
Europe	Netherlands	Eemshaven	Van Merksteijn International	-	EAF	1000	plan	?	Danieli PR
Europe	Poland	Stalowa Wola	Cognor Group	-	EAF	200	plan	2022	Company HP, World Steel Capacities
Europe	Romania	Galati	Galati Steelworks	-	EAF	4000	plan	?	Company HP
Europe	Türkiye	Orhangazi, Bursa	Asil Celik Ticaret	-	EAF	180	operati ng	2022	Metal Expert
Europe	Türkiye	Iskenderun, Hatay	Tosyali Holding	-	EAF	4000	under way	2023	World Steel Capacities, kallanish
Europe	Türkiye	Foça, Izmir	Izmir Demir Celik	-	EAF	1400	under way	2023	Metal Expert, kallanish
Europe	United Kingdom	Newport	Liberty House	-	EAF	?	plan	?	Company HP

42 | LATEST DEVELOPMENTS IN STEELMAKING CAPACITY

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Europe	United Kingdom	Tees Valley	South Tees Development Corporation (STDC)	-	EAF	?	plan	?	Metal Expert
Europe	Sweden	Norrbottn	H2 Green Steel	-	EAF	5000	plan	2025	Metal Expert, Company HP
Europe	Spain	Gijon	ArcelorMittal	-	EAF	1100	plan	2025	Company HP
Europe	France	Fos-sur-Mer	ArcelorMittal	-	EAF	?	plan	2027	Company HP
Europe	France	Dunkerque	ArcelorMittal	-	EAF	?	plan	2027	Company HP
Latin America	Bolivia	El Mutún, Santa Cruz	Empresa Siderurgica del Mutun	-	EAF	1000	under way	2023	Platts, Company HP, Metal Expert
Latin America	Brazil	Jean de Monlevade, Minas Gerais	ArcelorMittal	-	BOF	1000	under way	2024	Company HP
Latin America	Brazil	Pindamonhangaba	Grupo Simec	-	EAF	730	under way	2023	Metal Expert, Kallanish
Latin America	Brazil	Ipatinga, Minas Gerais	Usiminas	-	BOF	4900	plan	2023	Metal Expert
Latin America	Brazil	Cariacica, Vitoria, Espirito Santo	Grupo Simec	-	EAF	200	plan	?	Metal Expert
Latin America	Cuba	Havana	Empresa Siderurgica Jose Marti	-	EAF	170	plan	2025	World Steel Capacities
Middle East	Iran	Hormozgan, Hormozgan	Mobarakeh Steel	-	EAF	1500	plan	2023	World Steel Capacities, Platts
Middle East	Iran	Charmahal-va-Bakhtiyari	Mobarakeh Steel	-	EAF	1000	under way	2022	Metal Expert
Middle East	Iran	Charmahal-va-Bakhtiyari	Mobarakeh Steel	-	EAF	1000	plan	?	World Steel Capacities
Middle East	Iran	Ahvaz, Khuzestan	Khuzestan Oxin Steel	-	EAF	1200	plan	2025	Metal Expert
Middle East	Iran	Isfahan, Isfahan	Esfahan Steel	-	BOF	2280	plan	?	World Steel Capacities
Middle East	Iran	Isfahan, Isfahan	Esfahan Steel	-	EAF	1650	plan	?	World Steel Capacities
Middle East	Iran	Khorramshahr, Khuzestan	Khuzestan Steel	-	EAF	1250	plan	?	World Steel Capacities
Middle East	Iran	Khorramshahr, Khuzestan	Khuzestan Steel	-	EAF	1250	plan	?	World Steel Capacities
Middle East	Iran	Khorramshahr, Khuzestan	Khuzestan Steel	-	EAF	1250	plan	?	World Steel Capacities

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Middle East	Iran	Khorramshahr, Khuzestan	Khuzestan Steel	-	EAF	1250	plan	?	World Steel Capacities
Middle East	Iran	Shadegan, Khuzestan	Khuzestan Steel	-	EAF	1000	under way	2023	Company HP(IMIDRO), Metal Expert
Middle East	Iran	Shadegan, Khuzestan	Khuzestan Steel	-	EAF	1300	plan	?	World Steel Capacities
Middle East	Iran	Shadegan, Khuzestan	Khuzestan Steel	-	EAF	1300	plan	?	World Steel Capacities
Middle East	Iran	Azadegan	Iran Alloy Steel Company (IASCO)	-	EAF	1000	under way	2023	Metal Expert, World Steel Capacities
Middle East	Iran	Ahvaz, Khuzestan	Iran National Steel Industrial Group (INSIG)	-	EAF	430	plan	?	World Steel Capacities
Middle East	Iran	Tehran	Kaavian Steel	-	EAF	700	plan	?	World Steel Capacities
Middle East	Iran	Mianeh, East Azerbaijan	Mianeh Steel	-	EAF	800	under way	2022	Metal Expert
Middle East	Iran	Jovein, Khorasan Rezavi	Sabzevar Steel Complex	-	EAF	800	under way	?	Metal Expert, World Steel Capacities
Middle East	Iran	Qaen, South Khorasan	Ghaenat Steel Complex	-	EAF	800	under way	2022	Metal Expert
Middle East	Iran	Ajabshir, East Azerbaijan	Saeb Steel Complex	-	EAF	550	plan	?	Metal Expert
Middle East	Iran	Ajabshir, East Azerbaijan	Shams Iron & Steel Complex	-	EAF	1500	plan	?	World Steel Capacities
Middle East	Iran	Sabalan	Sabalan Iron and Steel Complex	-	EAF	500	plan	?	World Steel Capacities
Middle East	Iran	Zonouz	Zonouz steel complex	-	EAF	500	plan	?	Company HP
Middle East	Iran	?	Bonab Steel Complex	-	?	1450	plan	2025	Metal Expert
Middle East	Iran	Arvand, Khoramshahr	East Kaveh Steel Company (EKSC)	-	EAF	1000	plan	?	World Steel Capacities, Metal Expert
Middle East	Iran	Arvand, Khoramshahr	Arvand Kaveh Steel	-	EAF	2500	plan	?	World Steel Capacities
Middle East	Iran	Chabahar city, Sistan and Baluchestan	Makran Steel Complex	-	EAF	3200	plan	2030	Metal Expert

44 | LATEST DEVELOPMENTS IN STEELMAKING CAPACITY

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Middle East	Iran	Bandar Abbas, Hormozgan	Gambron Steel	-	EAF	2000	plan	?	World Steel Capacities
Middle East	Iran	Kermanshah	Jahan Foulad Gharb	-	EAF	500	plan	2025	WM
Middle East	Iran	Ardakan, Yazd	Arfa Iron & Steel	-	EAF	200	under way	2022	Metal Expert
Middle East	Iran	Shahrood, Semnan	Shahrood Steel	-	IF	100	operating	2022	World Steel Capacities, Company HP
Middle East	Iran	Fars	Neyriz Ghadir Steel Company (NGHSCO)	-	EAF	1000	under way	2022	Metal Expert, Company HP
Middle East	Iran	East Azerbaijan	Afa Steel	-	EAF	600	plan	?	World Steel Capacities, Company HP
Middle East	Iran	Arak, Markazi	Amir Kabir Khazar Steel	-	EAF	500	plan	?	World Steel Capacities
Middle East	Iran	Buin Zahra, Qazvin	Arian Steel	-	EAF	550	plan	?	World Steel Capacities
Middle East	Iran	Arvand, Khoramshahr	Arvand Jahanara Steel Company (AJSCO)	-	EAF	1200	operating	2022	Metal Expert
Middle East	Iran	Arvand, Khoramshahr	Arvand Jahanara Steel Company (AJSCO)	-	EAF	1200	plan	2022	World Steel Capacities
Middle East	Iran	Azna, Lorestan Province	Azna Steel	-	EAF	700	plan	?	World Steel Capacities
Middle East	Iran	Bafgh, Yazd	Bafgh Mineral Complex Iron & Steel Company (B-MISCO)	-	EAF	800	under way	?	Metal Expert
Middle East	Iran	Yasouj, Kohgiluyeh and Boyer-Ahmad	Boyer Ahmad Steel Complex (Boyer Sanat)	-	EAF	300	plan	?	World Steel Capacities
Middle East	Iran	Ardakan, Yazd	Ardakan Steel	-	EAF	1000	plan	?	World Steel Capacities
Middle East	Iran	Abarkooh, Yazd	Abar Kouh Steel & Rolling	-	EAF	600	under way	2022	Metal Expert
Middle East	Iran	Fars	Eghlid Pars Steel	-	EAF	1000	plan	?	Metal Expert
Middle East	Iran	Fasa, Fars	Fasa Steel Complex Co (Fasco)	-	EAF	1500	plan	?	World Steel Capacities
Middle East	Iran	Sari, Mazandaran	Foolad Alborz Iranian Company (FAICO)	-	EAF	800	plan	?	World Steel Capacities

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Middle East	Iran	Sirjan, Kerman	MIDHCO	-	EAF	1500	plan	?	World Steel Capacities
Middle East	Iran	Sirjan, Kerman	MIDHCO	-	EAF	1500	plan	?	World Steel Capacities
Middle East	Iran	Damghan, Semnan	Kavir Damghan Steel Complex (KADASCO)	-	IF	200	plan	?	World Steel Capacities
Middle East	Iran	Bandar Abbas, Hormozgan	Kavir Damghan Steel Complex (KADASCO)	-	EAF	?	plan	?	World Steel Capacities
Middle East	Iran	Nishapur, Razavi Khorasan	Khayyam Steel	-	EAF	500	under way	2023	Metal Expert
Middle East	Iran	Saqez, Kurdistan region	Kurdistan Steel Company	-	EAF	1000	under way	2022	Platts, Company HP, Metal Expert
Middle East	Iran	Malayer, Hamedan	Malayer Steel Company	-	IF	300	plan	?	World Steel Capacities
Middle East	Iran	Malekan, Eastern Azerbaijan	Malekan Steel	-	EAF	400	plan	?	Metal Expert, World Steel Capacities
Middle East	Iran	Malekan, Eastern Azerbaijan	Malekan Steel	-	EAF	400	plan	?	World Steel Capacities
Middle East	Iran	Natanz, Isfahan	Natanz Steel Company	-	EAF	850	plan	?	Metal Expert
Middle East	Iran	Sabzevar, Razavi Khorasan	Neyshabur Steel Complex	-	EAF	800	plan	?	World Steel Capacities
Middle East	Iran	Natanz	North West Steel Industries (NWSI)	-	EAF	800	plan	?	World Steel Capacities
Middle East	Iran	Urmia 2nd Industrial Zone, Western Azerbaijan	Orumieh Steel Company	-	EAF	1200	plan	?	World Steel Capacities, Metal Expert, Company HP
Middle East	Iran	Urmia 2nd Industrial Zone, Western Azerbaijan	Orumieh Steel Company	-	IF	400	plan	?	World Steel Capacities
Middle East	Iran	Urmia 2nd Industrial Zone, Western Azerbaijan	Orumieh Steel Company	-	EAF	800	plan	?	World Steel Capacities

46 | LATEST DEVELOPMENTS IN STEELMAKING CAPACITY

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Middle East	Iran	Bandar Abbas, Hormozgan	Persian Gulf Saba Steel	-	EAF	1500	plan	?	World Steel Capacities
Middle East	Iran	Bandar Abbas, Hormozgan	Persian Gulf Saba Steel	-	EAF	1500	plan	?	World Steel Capacities
Middle East	Iran	Bandar Abbas, Hormozgan	Persian Gulf Saba Steel	-	EAF	1500	plan	?	World Steel Capacities
Middle East	Iran	Qeshm Free Zone	Qeshm Steel Development Co.(QE.S.D.Co)	-	EAF	1500	plan	?	Platts, Metal Expert, Company HP
Middle East	Iran	Qeshm Free Zone	Qeshm Steel Development Co.(QE.S.D.Co)	-	EAF	1500	plan	?	Platts, Metal Expert, Company HP
Middle East	Iran	Sefid dasht Industrial Park, Chaharmahal and Bakhtiari	Saba Foulad Zagros	-	EAF	460	under way	2023	Company HP
Middle East	Iran	Sadr, West Azerbaijan	Sadrfulad complex	-	EAF	400	plan	?	World Steel Capacities
Middle East	Iran	Sirjan, Kerman	Samangan Steel Industries	-	EAF	750	plan	?	Metal Expert, World Steel Capacities
Middle East	Iran	Sirjan, Kerman	Samangan Steel Industries	-	EAF	750	plan	?	Metal Expert, World Steel Capacities
Middle East	Iran	Mashhad, Razavi Khorasan	Kabkan Steel Company	-	EAF	150	operating	2022	Metal Expert, World Steel Capacities
Middle East	Iran	Dezful, Khorasan province	South Rouhina Steel	-	EAF	550	plan	?	World Steel Capacities
Middle East	Iran	Torbat Heydariyeh, Razavi Khorasan	Torbat Heydariyeh Steel	-	EAF	1450	plan	?	World Steel Capacities, Metal Expert
Middle East	Iran	Torbat Heydariyeh, Razavi Khorasan	Torbat Heydariyeh Steel	-	EAF	1450	plan	?	World Steel Capacities
Middle East	Iran	Chahar Mahal Bakhtiari	Brojen Steel	-	EAF	1000	plan	2025	WM
Middle East	Iran	Damghan, Semnan	Kavir Damghan Steel Complex (KADASCO)	-	IF	200	plan	?	Metal Expert

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
Middle East	Iran	Sirjan, Kerman	Jahan Foolad Sirjan Steel Complex	-	EAF	1300	under way	2024	Metal Expert
Middle East	Iran	Torbat-e Heydariyeh	National Iranian Steel Company	-	EAF	800	plan	?	Metal Expert
Middle East	Iran	Natanz	North West Steel Industries (NWSI)	-	EAF	800	plan	?	World Steel Capacities
Middle East	Iran	Ravar, Kerman province	Kavand Nahan Zamin (KNZ)	-	EAF	100	plan	?	Metal Expert
Middle East	Iran	Ardestan, Isfahan province	Kavir Steel Cooperative	-	IF	150	under way	2023	Metal Expert
Middle East	Iran	Isfahan	Sepid Farab Kavir Steel	-	EAF	800	under way	2024	Metal Expert
Middle East	Iran	Bardsir, Kerman	Gohar Zamin Iron Ore Company	-	EAF	3000	plan	?	Metal Expert
Middle East	Iran	Hamadan	Rad Hamadan Steel	-	IF	450	operating	2022	Metal Expert
Middle East	UAE	Abu Dhabi	BILDCO	-	EAF	1000	plan	?	Metal Expert
Middle East	Iraq	Khor Al-Zubair, Basra	State Company for Iron & Steel (SCIS)	-	EAF	500	under way	2022	Metal Expert
Middle East	Oman	Rusayl	Muscat Steel Industries	-	EAF	200	plan	?	World Steel Capacities
Middle East	Oman	Sohar or Sur	Shumookh Investment and Services (SIS)	-	?	400	plan	?	Metal Expert
Middle East	Iraq	Kurdistan region	Van Steel	-	EAF	500	under way	2022	Metal Expert
Middle East	Saudi Arabia	Dammam	Al-Qaryan Steel Company	-	EAF	300	plan	?	Metal Expert
Middle East	Saudi Arabia	Jizan	Al-Yamamah Steel Industries	-	EAF	1000	plan	?	Platts, Metal Expert
Middle East	Saudi Arabia	Jeddah	Arkan Steel	-	EAF	600	plan	?	World Steel Capacities
Middle East	Saudi Arabia	Yanbu, Medina	Atoun Steel Industry	-	EAF	910	plan	?	Platts, Metal Expert
Middle East	Saudi Arabia	Ras Al-Khair	Gulf Tubing Co	-	EAF	600	plan	?	Company HP
Middle East	Saudi Arabia	Riyadh	Madina Metal	-	IF	300	under way	2022	Metal Expert
North America	United States	Sinton, Texas	Steel Dynamics	-	EAF	2722	operating	2022	Company HP, kallinish

48 | LATEST DEVELOPMENTS IN STEELMAKING CAPACITY

REGION	ECONOMY	LOCATION	COMPANY	OWNER (ECONOMIES) except themselves	EQUIP MENT	CAPA CITY	STAT US	STAR T	SOURCES
North America	United States	?	U.S. Steel	-	EAF	2720	plan	2024	Metal Expert
North America	United States	Brandenburg, Kentucky	Nucor Corporation	-	EAF	1088	under way	2022	Company HP, Metal Expert
North America	United States	Delta, Ohio	North Star BlueScope Steel	BlueScope Steel (Australia)	EAF	850	under way	2022	Company HP
North America	United States	Calvert, Alabama	ArcelorMittal USA	ArcelorMittal (Luxembourg)/Nippon Steel (Japan)	EAF	1500	under way	2023	Metal Expert, Company HP
North America	United States	Mesa, Arizona	Commercial Metals Company (CMC)	-	EAF	453	under way	2023	Metal Expert
North America	United States	Baytown, Texas	JSW USA	JSW Holdings (India)	EAF	?	plan	?	Platts
North America	United States	Georgetown, South Carolina	Liberty House Group	Liberty House Group (United Kingdom)	EAF	?	plan	?	Company HP
North America	United States	Ghent, Kentucky	Nucor Corporation	-	EAF	1271	operati ng	2022	Company HP, Metal Expert
North America	United States	?	Nucor Corporation	-	EAF	544	plan	2024	Metal Expert
North America	United States	Mason County, West Virginia	Nucor Corporation	-	EAF	2721	plan	2024	Metal Expert
North America	United States	Mojave, California	Pacific Steel	-	Steelm aking	380	plan	2025	Company HP
North America	Canada	Sault-St-Marie	Algoma	-	EAF	3700	plan	2024	Company HP
North America	Canada	Hamilton, Ontario	ArcelorMittal	-	EAF	2400	plan	2028	Metal Expert
North America	Canada	Whitby, Ontario	Gerdau Ameristeel	-	EAF	181	under way	2022	Metal Expert
Oceania	Australia	Whyalla, South Australia	Liberty One Steel	-	EAF	600	plan	?	Metal Expert

Source: Company HP (CHP) and media sources in the table

Annex B. AVAILABLE INFORMATION ON PLANT-LEVEL CLOSURES

Table 6 summarises the plant-level closure information reported by public and commercial sources for the year 2022. Please note that this does not represent an exhaustive list of closures.

Table 6. Closure data

Status	Region	Economies	Location	Company	Equipment	capacity (thousand metric tonnes)	Sources
Done	Asia	China	Heyuan, Guangdong	Heyuan Derun Iron and Steel	EAF	920	Metal Expert
Expected	Asia	China	Linfen City, Shanxi	Tongcai Industry and Trade	BOF	2800	Metal Expert
Expected	Asia	China	Qinhuangdao City, Hebei	Changli Hongxing Industry	BOF	3800	Metal Expert
Expected	Asia	China	Zibo City, Shandong	Longsheng Iron and Steel	BOF	2000	Metal Expert
Expected	Asia	China	Tianjin City, Tianjin	Rockcheck Iron and Steel	BOF	1200	Metal Expert
Expected	Asia	China	Tangshan City, Hebei	Tianzhu Iron and Steel	BOF	3790	Metal Expert

Note: Facilities except Heyuan Derun Iron and Steel are expected to close in the second half of 2022.

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

Annex C. STEELMAKING CAPACITY DATA BY ECONOMY

Table 7. Crude Steelmaking capacity developments (in mmt)

	Nominal crude steelmaking capacity					
	2010	2018	2019	2020	2021	2022e
Africa	33.6	43.3	44.6	44.7	43.5	47.6
Algeria	3.3	6.8	7.9	9.3	9.3	9.3
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
Côte d'Ivoire	0.0	0.0	0.0	0.0	0.0	0.0
Egypt	9.5	15.3	15.6	15.6	14.4	15.2
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	2.8	3.6
Mozambique	0.0	0.0	0.0	0.0	0.0	0.0
Namibia	0.0	0.0	0.0	0.0	0.0	1.0
Nigeria	2.7	3.1	3.1	3.1	3.1	3.4
South Africa	12.0	9.4	9.4	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	2.0

	Nominal crude steelmaking capacity					
	2010	2018	2019	2020	2021	2022e
Asia	1437.9	1584.6	1616.5	1622.5	1622.6	1630.6
Non-OECD Asia	1229.9	1374.5	1406.4	1412.4	1418.7	1426.6
Bangladesh	3.2	6.1	6.1	7.0	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	1 122.9	1148.3	1147.9	1146.5	1149.9
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	127.0	128.7	128.7	133.9	138.4
Indonesia	10.8	16.0	17.8	19.6	21.3	21.3
Japan	132.0	128.5	128.5	128.5	122.4	122.4
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 PDR	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	7.1	8.6	9.0	9.0
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	20.7	23.7	26.0	26.0	26.0
ASEAN-6	42.4	69.8	74.6	78.7	80.4	80.4

CIS	139.6	141.9	143.4	142.6	143.9	145.1
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	0.1	0.4	0.4	0.4
Kazakhstan	7.1	7.7	7.7	7.7	7.7	7.7
Moldova	1.0	1.0	1.0	1.0	1.0	1.0
Russia	77.7	86.7	88.3	88.8	90.1	90.9
Turkmenistan	0.2	0.2	0.2	0.2	0.2	0.2
Ukraine	48.8	40.2	40.2	38.7	38.7	38.7
Of which Autonomous Republic of Crimea, Luhansk and Donetsk regions¹	29.3	20.9	20.9	20.9	20.9	20.9
Uzbekistan	1.1	1.1	1.1	1.1	1.1	1.4

	Nominal crude steelmaking capacity					
	2010	2018	2019	2020	2021	2022e
Europe	308.8	295.3	292.5	289.9	289.9	291.5
Non-OECD Europe	13.9	12.9	12.9	12.9	12.9	12.9
EU	235.4	218.7	216.0	213.4	213.4	213.6
Austria	8.5	8.5	8.5	8.5	8.5	8.7
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
Czech Republic	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	21.8	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	12.0	9.4	9.4	9.4
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	27.9	26.6	26.6	26.6	26.6	26.6
Sweden	6.0	6.0	6.0	6.0	6.0	6.0
Other Europe	73.4	76.6	76.5	76.5	76.5	77.9
Albania	0.9	0.9	0.9	0.9	0.9	0.9
Bosnia and 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
Montenegro	0.4	0.4	0.4	0.4	0.4	0.4
North Macedonia	0.5	0.5	0.5	0.5	0.5	0.5
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	46.1	55.9	55.8	55.8	55.8	57.2
United Kingdom	18.7	12.1	12.1	12.1	12.1	12.1

	Nominal crude steelmaking capacity					
	2010	2018	2019	2020	2021	2022e
Latin America	72.9	78.2	78.2	77.7	78.2	78.2
South America	70.2	76.5	76.5	76.0	76.5	76.5
Non OECD Latin America	68.8	74.2	74.2	73.6	74.2	74.2
Argentina	6.7	7.3	7.3	7.3	7.3	7.3
Brazil	51.2	55.7	55.7	55.2	55.2	55.2
Bolivia	0.0	0.0	0.0	0.0	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	0.7
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	2.0	2.4	2.4
Trinidad and 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	74.8	80.7	84.1	89.0	97.6
Non OECD Middle East	37.9	74.2	80.1	83.6	88.5	97.1
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	42.5	48.3	50.3	54.8	62.1
Iraq	0.2	2.6	2.6	2.9	3.3	4.3
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	3.0	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	11.9
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

	Nominal crude steelmaking capacity					
	2010	2018	2019	2020	2021	2022e
North America	156.7	157.9	154.2	157.5	157.7	163.8
Canada	18.6	16.5	16.2	16.2	16.2	16.4
Mexico	20.3	27.7	27.7	27.7	27.7	27.7
United States	117.9	113.7	110.4	113.6	113.9	119.8
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	673.3	661.3	654.8	655.5	649.6	657.4
Non-OECD TOTAL	1523.8	1721.0	1761.6	1769.8	1781.6	1803.4
WORLD TOTAL	2197.1	2382.2	2416.4	2425.3	2431.3	2460.8

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.

Note by Türkiye:

The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Türkiye recognizes the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Türkiye shall preserve its position concerning the “Cyprus” issue.

Note by all the European Union Member States of the OECD and the European Union:

The Republic of Cyprus is recognized by all members of the United Nations with the exception of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Note on Israel:

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Source: OECD.

¹ Capacity figures include plants not under the Government of Ukraine’s effective control in the territory of the Autonomous Republic of Crimea, Luhansk and Donetsk regions, which together accounted for 20.9 mmt of capacity in 2022.

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

Table 8. Global crude steelmaking capacity and crude steel production (data from 2010)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022e
Steelmaking Capacity	2 197	2 269	2 321	2 413	2 432	2 421	2 417	2 404	2 382	2 416	2 425	2 431	2 461
Crude Steel Production	1 435	1 540	1 562	1 652	1 674	1 623	1 632	1 735	1 827	1 875	1 880	1 910	1 898
Capacity-Production Gap	762	729	758	760	758	798	785	669	555.6	541.1	544.8	522	562.9
Crude steel production as a % of capacity	65.3%	67.9%	67.3%	68.5%	68.8%	67.1%	67.5%	72.2%	76.7%	77.6%	77.5%	78.5%	77.1%

Note: “e” denotes estimation. Capacity data reflect information up to June 2022. Production figure for 2022 is calculated by multiplying the production for the six months of 2022 (January to June) by 2. Annual production data for 2021 and 2022 are based on worldsteel (released on 22 July 2022). Annual production data from 2000 to 2020 are from “Steel Statistical Yearbook 2021”, published by worldsteel (worldsteel, 2022^[1]).

Source: OECD for capacity and World Steel Association for production.

Annex E. WORKING DEFINITIONS USED

Steelmaking capacity

The OECD Secretariat employs a definition of nominal crude steelmaking capacity based on maximum theoretical equipment capacity¹. 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 developments². 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>