Sustainability Indicators
2021 report

Indicator trends and participation 2003-2020

Sustainability Indicators
2003 to 2020

Environmental Performance																		
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	CO2 intensity (tonnes CO2/tonne crude steel cast)																	
					1.80	1.79	1.81	1.80	1.76	1.75	1.82	1.80	1.87	1.87	1.84	1.81	1.85	1.89
2	Energy Intensity (GJ/tonne crude steel cast)																	
					20.10	20.13	20.49	20.13	19.81	19.63	20.08	19.76	20.25	20.32	19.91	19.51	20.06	20.62
3	Material efficiency (% of solid materials converted to products & co-products)																	
	96.09	96.78	96.96	96.49	97.94	98.03	97.94	97.48	96.11	96.48	98.00	97.47	97.36	97.64	96.49	96.33	97.49	97.86
4	Environmental Management System (EMS) (% of employees & contractors working in EMS-registered production facilities)																	
	90.92	92.40	82.69	84.78	85.07	86.62	88.89	87.60	89.93	89.53	90.18	94.05	93.59	96.85	96.49	97.07	97.16	96.11
Social Performance																		
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
5	Lost-time injury frequency rate (injuries/million hours worked)																	
		4.81	4.15	4.55	4.44	3.09	2.46	2.29	1.91	1.45	1.60	1.39	1.17	1.01	0.97	0.84	0.83	0.85
6	Employee training (training days/employee)																	
	7.46	11.62	12.28	10.52	11.10	8.02	8.47	6.95	7.74	7.88	7.80	6.27	6.75	7.11	6.26	6.48	6.90	7.18
Economic Performance																		
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
7	Investment in new processes and products (% of revenue)																	
	6.37	6.96	6.91	7.90	7.76	8.24	10.22	8.80	8.28	10.05	8.53	7.32	8.22	7.71	5.79	6.12	7.09	8.03
8	Economic Value Distributed (% of revenue)																	
					78.18	78.30	90.52	93.46	95.65	99.77	96.83	96.31	100.09	96.64	95.43	94.18	98.27	97.75

Notes:
Indicators 1 and 2: CO2 intensity and Energy intensity are calculated using route-specific energy and CO2 intensity for the basic oxygen furnace and electric arc furnace. The indicators are also weighted based on the production share of each route. Data prior to 2007 is not available.
Indicator 5: Lost time injury frequency rate includes fatalities and is calculated based on figures including contractors and employees. Data prior to 2004 is not available.
Indicator 6: Employee training includes production and non-production facilities.
Indicator 7: Investment in new processes and products includes capital expenditure and R&D investment.
Indicator 8: Data collection for EVD started in 2007.

Number of reporting companies
2003 to 2020

Table 1: Number of reporting organisation for Indicators 1 through 4

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
CO2 intensity					47	53	52	52	51	51	50	53	52	56	55	59	63	55
Energy intensity					47	53	52	52	51	51	50	53	52	56	55	59	63	55
Mat. efficiency	18	23	24	28	27	27	36	38	40	44	38	36	48	41	33	37	41	50
EMS	17	30	27	31	24	25	35	41	43	44	39	41	50	55	41	47	44	50

Table 2: Number of reporting organisations for Indicators 5 and 6

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
LTIFR		35	33	36	44	41	64	90	92	89	74	77	79	82	78	75	66	63
Training	18	29	27	30	24	26	33	38	39	41	38	37	45	37	33	39	41	50

Table 3: Number of reporting organisations for Indicators 7 and 8

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Investments*	23	30	30	34	31	32	38	41	42	41	42	59	72	65	59	59	59	66
EVD**					24	25	36	41	42	43	41	60	76	64	58	61	58	65

*Investment in new processes and products
** Data collection for EVD started in 2007

List of participating companies and associations in 2021

78 steel companies and associations listed below contributed data for one or more of the 2020 indicators.

1 Acciaierie Bertoli Safau S.p.A.
2 ACERINOX S.A.
3 Aceros AZA S.A.
4 Aço Verde do Brasil (AVB)
5 Aichi Steel Corporation
6 Altos Hornos de México, S.A.B. de C.V. (AHMSA)
7 Ansteel Group Corporation Limited
8 Aperam
9 ArcelorMittal
10 Asociación Latinoamericana del Acero (Alacero)
11 Badische Stahlwerke GmbH
12 Bahru Stainless Sdn Bhd
13 Bangladesh Steel Re-Rolling Mills Limited
14 BlueScope Steel Limited
15 Böllinghaus GmbH & Co. KG
16 CELSA Group
17 China Baowu Steel Group Corporation Limited
18 China Steel Corporation (CSC)
19 CITIC PACIFIC Special Steel Group Co., Ltd
20 Cogne Acciai Speciali Spa
21 Çolakoğlu Metalurji A.Ş.
22 Daido Steel Co., Ltd.
23 Deutsche Edelstahlwerke Specialty Steel GmbH & Co. KG.
24 Diler Iron and Steel Co., Inc.
25 Dragon Steel Corporation
26 Duferco S.A.
27 Emirates Steel Industries Company PJC
28 ERAMET
29 EVRAZ
30 EZZ Steel
31 Feng Hsin Steel Co., Ltd.
32 Gerdau S.A.
33 HBIS Group Co., Ltd.
34 HYUNDAI Steel Company
35 Japan Stainless Steel Association (JSSA)
36 JFE Steel Corporation
37 JSW Steel Limited
38 KAPTAN DEMIR CELIK ENDUSTRISI VE TICARET A.S.
39 Kobe Steel, Ltd
40 Kroman Çelik Sanayii A.Ş.
41 Liberty Speciality Steels
42 Liberty Steel Australia
43 Magnitogorsk Iron and Steel Works (PJSC)
44 Metalloinvest Management Company LLC
45 Metinvest Holding LLC
46 NatSteel Holdings Pte Ltd
47 Nippon Kinzoku Co., Ltd.
48 Nippon Steel Corporation
49 Nippon Steel Stainless Steel Corporation (NSSSC)
50 Nippon Yakin Kogyo Co., Ltd.
51 Novolipetsk Steel (NLMK Group)
52 Nucor Corporation
53 Outokumpu Oyj
54 Ovako AB
55 POSCO
56 PT Gunung Raja Paksi Tbk
57 Qatar Steel Company (Q.P.S.C.)
58 Rashtriya Ispat Nigam Ltd (VIZAG Steel)
59 SABIC-Saudi Basic Industries Corporation (HADEED)
60 SeAH Changwon Integrated Special Steel Corp.
61 Severstal (PAO)
62 Siam Yamato Steel, Thailand
63 SIDENOR S.A.
64 SIJ (Slovenian Steel Group)
65 Stahlbeteiligungen Holding S.A.
66 Steel Authority of India Ltd. (SAIL)
67 Tata Steel Europe
68 Tata Steel Limited
69 Techint Group (Tenaris)
70 Ternium
71 The Japan Iron and Steel Federation (JISF)
72 thyssenkrupp AG
73 TŘINECKÉ ŽELEZÁRNY, a.s
74 Tung Ho Steel Enterprise Corporation
75 UGITECH SA
76 United States Steel Corporation
77 Usinas Siderúrgicas de Minas Gerais S.A. (USIMINAS)
78 voestalpine AG

Publicly available data was used for the 16 companies below:

1 Anyang Steel
2 Baotou Iron & Steel (Group) Co., Ltd
3 Benxi Steel
4 Eregli Demir ve Çelik Fabrikalari TAS (Eregli Iron and Steel Works, Co.)
5 Fangda Steel
6 Jiangsu Shagang Group Co., Ltd.
7 Jinxi steel
8 Jiuquan steel
9 Lingyuan steel
10 Liuzhou Steel
11 Nanjing Steel
12 Sanming Steel
13 Shandong Steel
14 Shougang Group
15 Valin Group
16 Xinyu steel

Indicators
Definitions and relevance - Environmental performance (1/3)

Environmental performance			
	INDICATOR	DEFINITION	RELEVANCE
1.	CO_2 emissions	This indicator calculates tonnes of CO_2 emissions normalised against production (tonnes of crude steel cast). The calculation is based on CO_2 intensity for 2 steel production routes: 1) basic oxygen furnace 2) electric arc furnace This indicator includes scope 1, 2 and 3 according to the GHG protocol, excluding the upstream value of mining and transport to the steel site and is weighted based on the production share of each route. For more detail, check out our CO2 data collection user guide.	Reducing GHG emissions in steelmaking must be tackled on a global level. Making the substantial CO_2 reductions required will need technology transfer, collaboration and breakthrough technologies. Steel products also play an important role in a low carbon economy due to their long life cycle, 100% recyclability, and innovative qualities.
2.	Energy intensity	This indicator measures the energy consumed normalised against production (tonnes of crude steel cast). The calculation is based on route-specific intensity for 2 steel production routes: 1) basic oxygen furnace 2) electric arc furnace	Steel production is energy-intensive. The steel industry has made significant reductions in energy consumption in the past decades resulting in benefits to the environment while ensuring economic competitiveness.
3.	Material efficiency	This indicator measures the percentage of raw materials used on-site to make crude steel converted to products and co-products. The industry's goal is zero waste.	The recovery and use of co-products within and outside the steel industry combined with the responsible management of natural resources contribute to material efficiency and help to prevent waste.
4.	Environmental management system (EMS)	This indicator measures the percentage of employees and contractors who work in a production facility that has been certified to a recognised international EMS standard such as ISO 14001*, or EMAS**.	Registered environmental management systems are an effective way to manage environmental performance and to ensure legal compliance.

Indicators
Definitions and relevance - Social performance (2/3)

Social performance			
	INDICATOR	DEFINITION	RELEVANCE
5.	Lost time injury frequency rate (LTIFR)	A Lost Time Injury (LTI) is an incident that causes an injury that prevents the person from returning to his next scheduled shift or work period. Lost Time Injury Frequency Rate (LTIFR) is the number of Lost Time Injuries per million man-hours. LTIFR includes fatalities.	Our industry employs millions of people. Nothing is more important than the safety and health of the people who work in the steel industry.
6.	Employee training	This indicator measures the total days of training per employee. The result of the calculation is the average number of training days per employee and year. Training may include various types of development programmes such as classroom instruction, computer-based training, self-study and learning or on-the-job instruction. Employee training does not focus on safety and health, but may include it.	Human capital is a key asset for all organisations and a main driver for the creation of value. Training programmes aim to expand the knowledge and skills of employees and help them to make the best use of their talents.

Indicators
Definitions and relevance - Economic performance (3/3)

Economic performance			
	INDICATOR	DEFINITION	RELEVANCE
7.	Investment in new processes and products	This indicator measures the value of investments made on capital expenditure, and research and development expressed as a percentage of revenue. Capital expenditure refers to money used to acquire or improve long-term physical assets such as property, plants, machinery and equipment, industrial buildings and warehouses. Research and development refers to money used with the prospect of gaining new scientific or technical knowledge to develop new products, processes, and services. The result is presented as percentage of annual revenue.	Investments in new processes and R&D contribute to a sustainable steel industry.
8.	Economic value distributed (EVD)	This indicator aims to quantify the value distributed to society by the steel industry. It includes direct and indirect contributions, regardless of the country's financial structure (e.g. all contributions are captured - whether made directly from the company to the community or indirectly from the company through government taxes, shareholder dividends or employee wages, etc.). It is a sum of: • Operating costs (payments to suppliers, contractors, etc.) • Employee wages and benefits (gross values, including employee tax paid) • Dividends paid to all shareholders (including non-controlling interest) • Interest payments made to providers of loans • Payments to government (gross taxes and royalties, not including employee tax paid) • Community investments (voluntary contributions and investments of funds in the broader community, including donations and scholarships, etc.). The result is presented as billion US$ and US$ as a percentage of total revenue.	Steel is critical to economic growth. It is important to quantify the value companies create and to establish how much of this wealth is distributed to society.

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ASSOCIATION