

IRON ORE¹

(Data in thousand metric tons, usable ore, unless otherwise noted)

Domestic Production and Use: In 2020, mines in Michigan and Minnesota shipped 98% of the usable iron ore products, which were consumed in the steel industry in the United States with an estimated value of \$4.1 billion, a decrease from \$4.4 billion in 2019. The remaining 2% of domestic iron ore was produced for nonsteel end uses. Seven open pit iron ore mines (each with associated concentration and pelletizing plants), and three iron metallic plants—one direct-reduced iron (DRI) plant in Louisiana and two hot-briquetted iron (HBI) plants in Indiana and Texas—operated during the year to supply steelmaking raw materials. The United States was estimated to have produced 1.5% and consumed 1.1% of the world's iron ore output.

Salient Statistics—United States:²	2016	2017	2018	2019	2020^e
Production:					
Iron ore	41,800	47,900	49,500	46,900	37,000
Iron metallics	2,070	3,250	3,560	3,660	3,400
Shipments	46,600	46,900	50,400	47,000	34,000
Imports for consumption	3,010	3,720	3,810	3,980	2,900
Exports	8,710	10,600	12,700	11,400	10,000
Consumption:					
Reported	34,500	34,400	36,600	34,800	27,000
Apparent ³	37,900	40,100	41,400	39,100	33,000
Price, average value reported by mines, dollars per ton	73.11	78.54	93.00	92.94	108.00
Stocks, mine, dock, and consuming plant, excluding byproduct ore, yearend	2,990	3,930	3,100	3,500	1,100
Employment, mine, concentrating and pelletizing plant, number	4,660	4,630	4,860	4,960	4,700
Net import reliance ⁴ as a percentage of apparent consumption (iron content of ore)	E	E	E	E	E

Recycling: None. See Iron and Steel Scrap.

Import Sources (2016–19): Brazil, 58%; Canada, 21%; Sweden, 7%, Chile, 4%; and other, 10%.

Tariff:	Item	Number	Normal Trade Relations 12–31–20
	Iron ores and concentrates:		
	Concentrates	2601.11.0030	Free.
	Coarse ores	2601.11.0060	Free.
	Other ores	2601.11.0090	Free.
	Pellets	2601.12.0030	Free.
	Briquettes	2601.12.0060	Free.
	Sinter	2601.12.0090	Free.
	Roasted iron pyrites	2601.20.0000	Free.

Depletion Allowance: 15% (domestic), 14% (foreign).

Government Stockpile: None.

Events, Trends, and Issues: Significant decreases in production, shipments, and trade in 2020 were due to the ongoing effects of the COVID-19 pandemic, which lowered steel production and consumption globally. Domestic iron ore production was estimated to be 37 million tons in 2020, 21% lower than 46.9 million tons in 2019, owing to the closure of multiple iron ore plants. Total raw steel production was estimated to have decreased to 69 million tons in 2020 from 87.8 million tons in 2019. The share of steel produced by basic oxygen furnaces, the process that uses iron ore, continued to decline from 37.3% in 2015 to an estimated 30% in 2020 owing to increased use of electric arc furnaces because of their energy efficiency, reduced environmental impacts, and the ready supply of scrap.

Overall, global prices trended upwards to an average value of \$97.96 per ton in the first 8 months of 2020, a 4% increase from the 2019 annual average of \$93.85 per ton and a 40% increase from the 2018 annual average of \$69.75 per ton. Based on reported prices for iron ore fines (62% iron content) imported into China (cost and freight into Tianjin Port), the highest monthly average price during the first 8 months of 2020 was \$121.07 per ton in August compared with the high of \$120.24 per ton in July 2019. The lowest monthly average price during the same period in

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2020 was \$84.73 per ton in April compared with the low of \$76.16 per ton in January 2019. The prices trended upwards owing to a reduced supply of higher grade iron ore products, spurred partially by closures of pelletizing plants in Brazil. One company in Brazil cut guidance for pellet sales in 2020 by 25 million to 30 million tons based on first-quarter projections following 302 million tons of iron ore production in 2019, a decrease from 385 million tons produced in 2018, owing to a tailings dam collapse that idled operations at the collocated mine.

In August, one company expected to begin production at a hot-briquetted iron plant under construction in Ohio in late 2020, and announced it had entered into a definitive agreement to purchase two iron ore mines, six steelmaking facilities, eight finishing facilities, and three coal and cokemaking operations from another domestic iron and steel production company. In the first half of 2020, five domestic iron ore mines were idled with only four restarting in the second half of the year. One mine continued to remain idle with no plans to restart as of October. Globally, iron ore production in 2020 was expected to decrease slightly from that of 2019. Global finished steel consumption was forecast by the World Steel Association⁵ to decrease by 2.4% in 2020 and increase by 4.1% in 2021.

World Mine Production and Reserves: Reserves for Australia, Brazil, and South Africa were revised based on Government and industry sources.

	Mine production				Reserves ^{6, 7}	
	Usable ore		Iron content		Crude ore	Iron content
	2019	2020 ^e	2019	2020 ^e		
United States	46,900	37,000	29,800	24,000	3,000	1,000
Australia	919,000	900,000	569,000	560,000	⁸ 50,000	⁸ 24,000
Brazil	405,000	400,000	258,000	252,000	34,000	15,000
Canada	58,500	57,000	35,200	34,000	6,000	2,300
Chile	13,100	13,000	8,430	8,000	NA	NA
China	351,000	340,000	219,000	210,000	20,000	6,900
India	238,000	230,000	148,000	140,000	5,500	3,400
Iran	33,100	32,000	21,700	21,000	2,700	1,500
Kazakhstan	22,000	21,000	6,150	5,900	2,500	900
Peru	15,100	15,000	10,100	10,000	NA	1,500
Russia	97,500	95,000	64,300	63,000	25,000	14,000
South Africa	72,400	71,000	41,200	40,000	1,000	640
Sweden	35,700	35,000	22,100	22,000	1,300	600
Turkey	16,400	16,000	9,110	8,900	NA	NA
Ukraine	63,200	62,000	39,500	39,000	⁹ 6,500	⁹ 2,300
Other countries	67,700	75,000	39,000	43,000	18,000	9,500
World total (rounded)	2,450,000	2,400,000	1,520,000	1,500,000	180,000	84,000

World Resources:⁶ U.S. resources are estimated to be 110 billion tons of iron ore containing about 27 billion tons of iron. U.S. resources are mainly low-grade taconite-type ores from the Lake Superior district that require beneficiation and agglomeration prior to commercial use. World resources are estimated to be greater than 800 billion tons of crude ore containing more than 230 billion tons of iron.

Substitutes: The only source of primary iron is iron ore, used directly as direct-shipping ore or converted to briquettes, concentrates, DRI, iron nuggets, pellets, or sinter. DRI, iron nuggets, and scrap are extensively used for steelmaking in electric arc furnaces and in iron and steel foundries. Technological advancements have been made, which allow hematite to be recovered from tailings basins and pelletized.

^eEstimated. E Net exporter. NA Not available.

¹Data are for iron ore used as a raw material in steelmaking unless otherwise noted. See also Iron and Steel and Iron and Steel Scrap.

²Except where noted, salient statistics are for all forms of iron ore used in steelmaking, and do not include iron metallics, which include DRI, hot-briquetted iron, and iron nuggets.

³Defined as production + imports – exports + adjustments for industry stock changes.

⁴Defined as imports – exports + adjustments for industry stock changes.

⁵World Steel Association, 2020, Short range outlook October 2020: Brussels, Belgium, World Steel Association press release, October 15, 7 p.

⁶See Appendix C for resource and reserve definitions and information concerning data sources.

⁷Million metric tons.

⁸For Australia, Joint Ore Reserves Committee-compliant reserves were 23 billion tons for crude ore and 11 billion tons for iron content.

⁹For Ukraine, reserves consist of the A and B categories of the Soviet reserves classification system.